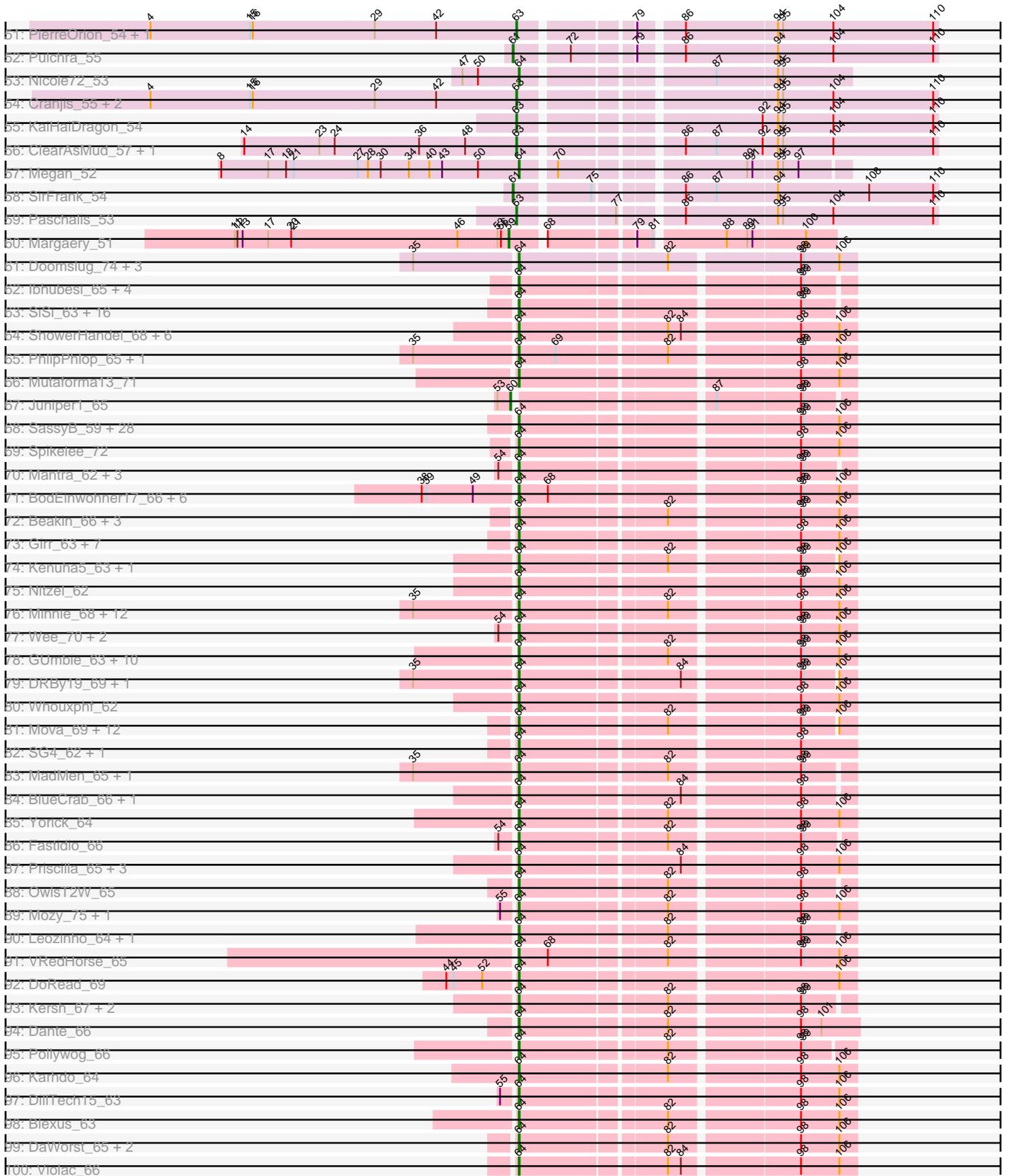
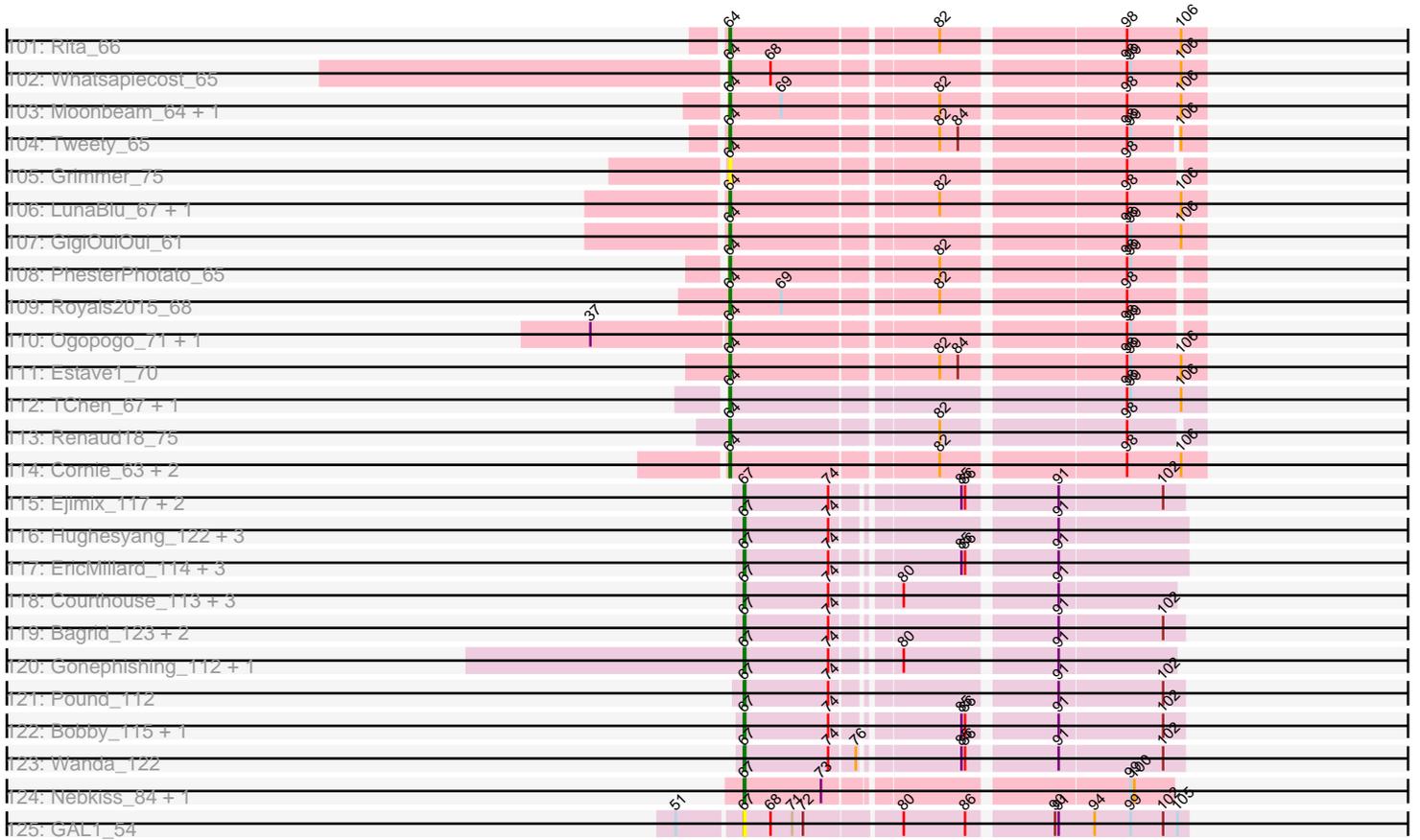




Pham 290753



Pham 290753



Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

## Pham 290753 Report

This analysis was run 03/28/26 on database version 641.

Pham number 290753 has 331 members, 38 are drafts.

Phages represented in each track:

- Track 1 : Chickaboom\_30, WileyE\_30
- Track 2 : Galaxy\_30
- Track 3 : Pelletreau\_31, KendraB23\_32, Gravel\_31, Zixiang\_27, Amanises\_32
- Track 4 : Toad24\_31
- Track 5 : Ruchi\_29
- Track 6 : Westrich\_31
- Track 7 : Vulpecula\_29, Basilisk\_30
- Track 8 : Abidatro\_29
- Track 9 : TaylorSipht\_29
- Track 10 : Orcanus\_29
- Track 11 : Niblet\_27
- Track 12 : Brynnie\_29
- Track 13 : Eesa\_28
- Track 14 : Jamun\_28
- Track 15 : Kepler\_32, Daob\_33
- Track 16 : LittleTokyo\_32
- Track 17 : Amelia\_32, HannahPhantana\_32, Cote\_33, Coral\_31, Bedetta\_34, Colusalem\_32, Jerole\_32, Pineda\_33
- Track 18 : Antrice\_34
- Track 19 : PhirstandPhine\_34, Melons\_32
- Track 20 : Kuleana\_32
- Track 21 : Cygnet\_31
- Track 22 : Polka\_31, OtsoOtso\_32
- Track 23 : Lunar\_32
- Track 24 : Zhuangyuan\_34
- Track 25 : PhluffyCoco\_30, Glotell\_31, Atlantica\_30, RedFox\_30, AmiCi24\_29, HamCheese\_30, Juno112\_29, DanHam62\_30
- Track 26 : AdoptaAdorbs\_29, Oppalora\_29, Camara\_30, Laphuphu24k\_29, Fingolfin\_30, Rattail\_30, Amphitrite\_30
- Track 27 : Andrew\_31
- Track 28 : Babushka\_27
- Track 29 : AlexMinion\_32
- Track 30 : Leona\_29
- Track 31 : KHumphrey\_30
- Track 32 : Renna12\_29
- Track 33 : Azaz\_30
- Track 34 : BotCity\_75, BearBQ\_70

- Track 35 : Phabuloso\_75
- Track 36 : Tyumbra\_54
- Track 37 : Zapato\_53
- Track 38 : Skugga\_53
- Track 39 : Smarties\_62, Ariadne\_62
- Track 40 : Ramiel05\_53, Kowalski\_53, BrazzalePHS\_53
- Track 41 : Lucretia\_54
- Track 42 : Fireman\_56, RobsFeet\_57, Metamorphoo\_56, Shrubaron\_56
- Track 43 : Gina\_56, Teamocil\_56
- Track 44 : Shotgun\_53, Quhwah\_57, Antares\_54, PhedwardCullen\_52, BeagleBug\_53, Savannah\_53
- Track 45 : Merry\_, Sunny\_
- Track 46 : Crisis\_55, Jefe\_54, CrazyRich\_53
- Track 47 : Glorp\_55, Honeyfin\_55, Yeti\_54
- Track 48 : Hermeonysus\_53, Rockwell\_53, Onika\_53, PiperSansNom\_54
- Track 49 : Busephilis\_53, Phrancesco\_54
- Track 50 : Ganandorf\_53, Piperis\_54, Phorgeous\_53
- Track 51 : PierreOrion\_54, Jollipop\_54
- Track 52 : Pulchra\_55
- Track 53 : Nicole72\_53
- Track 54 : Cranjis\_55, LittleFortune\_55, Scumberland\_55
- Track 55 : KaiHaiDragon\_54
- Track 56 : ClearAsMud\_57, NoodlelyBoi\_55
- Track 57 : Megan\_52
- Track 58 : SirFrank\_54
- Track 59 : Paschalis\_53
- Track 60 : Margaery\_51
- Track 61 : Doomslug\_74, Hegedechwinu\_65, Gandalph\_68, Topiatin\_72
- Track 62 : lbhubesi\_65, Brushbloom\_67, Bobi\_69, Batiatus\_63, MilleniumForce\_68
- Track 63 : SiSi\_63, Juice456\_66, Boomer\_70, Kimberlium\_70, Byougenkin\_65, QuickMath\_69, Hamulus\_65, JalFarm20\_78, Ardmore\_57, Jant\_69, KristaRAM\_68, Starcevich\_65, Chuckly\_68, MulchExplorer\_73, PMC\_62, Rockne\_66, Avani\_73
- Track 64 : ShowerHandel\_68, Zizzle\_69, Pippy\_64, BobaPhett\_69, Maravista\_67, ByChance\_58, Crumble\_60
- Track 65 : PhlipPhlop\_65, Vivum\_66
- Track 66 : Mutaforma13\_71
- Track 67 : Juniper1\_65
- Track 68 : SassyB\_59, Strokeseat\_61, Ovechkin\_65, DotProduct\_60, Mandlovu\_61, Donkeykong\_68, Girafales\_73, Florinda\_76, Emmaloid\_67, Ms6\_62, IrishSherpFalk\_66, Flathead\_66, Phalconet\_63, PopTart\_59, Seagreen\_64, Filuzino\_63, Chevrolet\_70, WillSterrel\_66, Shauna1\_63, DLane\_60, StAnnes\_63, Melissauren88\_63, Plumbus\_68, Hlubikazi\_61, Slim\_67, Quico\_73, Rialto\_70, Phanphagia\_61, Spartacus\_67
- Track 69 : Spikelee\_72
- Track 70 : Mantra\_62, Jabbawokkie\_80, Zapner\_79, Blarby\_78
- Track 71 : BodEinwohner17\_66, lbOuu\_65, Geralt\_60, Deb65\_60, OldBen\_63, Empress\_64, Nimbo\_59
- Track 72 : Beakin\_66, Soul22\_71, Hades\_66, Guppsters\_66
- Track 73 : Girr\_63, Ruby\_61, MisterCuddles\_63, XFactor\_63, Zerg\_65, RockyHorror\_66, Doug\_67, Alexphander\_69
- Track 74 : Kenuha5\_63, SuperGrey\_69
- Track 75 : Nitzel\_62

- Track 76 : Minnie\_68, Burwell21\_63, LilMoolah\_64, LastJedi\_59, Aubs\_65, SwagPiggett\_70, CaptainTrips\_63, MinionDave\_64, Pacc40\_59, Sandalphon\_66, Clifton\_60, Brocalys\_60, Nivrat\_62
- Track 77 : Wee\_70, DeadP\_72, Taj\_70
- Track 78 : GUmbie\_63, BuzzLyseyear\_71, Eradicator\_58, Che8\_70, Saal\_67, Gorge\_69, Mattes\_69, James\_69, Tchotchke\_64, Lizziana\_71, OlympiaSaint\_67
- Track 79 : DRBy19\_69, Philus\_69
- Track 80 : Whouxphf\_62
- Track 81 : Mova\_69, Totinger\_65, DosHalletts\_67, Llij\_61, ArcusAngelus\_67, Radiance\_64, Lorde\_65, DirtMcgirt\_64, Eish\_68, Phatniss\_63, Drago\_62, UncleRicky\_64, Enby\_66
- Track 82 : SG4\_62, Mahavrat\_62
- Track 83 : MadMen\_65, Martik\_65
- Track 84 : BlueCrab\_66, FreddyB\_66
- Track 85 : Yorick\_64
- Track 86 : Fastidio\_66
- Track 87 : Priscilla\_65, NormanBulbieJr\_65, Cabrinians\_66, Koella\_59
- Track 88 : OwlsT2W\_65
- Track 89 : Mozy\_75, Fancypants\_68
- Track 90 : Leozinho\_64, EleanorGeorge\_67
- Track 91 : VRedHorse\_65
- Track 92 : DoRead\_69
- Track 93 : Kersh\_67, ShiLan\_64, Che9d\_75
- Track 94 : Dante\_66
- Track 95 : Pollywog\_66
- Track 96 : Karhdo\_64
- Track 97 : DillTech15\_63
- Track 98 : Blexus\_63
- Track 99 : DaWorst\_65, Ramsey\_64, Madiba\_66
- Track 100 : Violac\_66
- Track 101 : Rita\_66
- Track 102 : Whatsapiecost\_65
- Track 103 : Moonbeam\_64, Emma\_67
- Track 104 : Tweety\_65
- Track 105 : Grimmer\_75
- Track 106 : LunaBlu\_67, Galactic\_64
- Track 107 : GigiOuiOui\_61
- Track 108 : PhesterPhotato\_65
- Track 109 : Royals2015\_68
- Track 110 : Ogopogo\_71, ThetaBob\_73
- Track 111 : Estave1\_70
- Track 112 : TChen\_67, LunaStella\_65
- Track 113 : Renaud18\_75
- Track 114 : Cornie\_63, CheesePuff\_74, Bipolar\_65
- Track 115 : Ejimix\_117, Redno2\_116, Halley\_125
- Track 116 : Hughesyang\_122, Zelink\_117, Minerva\_120, ThreeRngTarjay\_118
- Track 117 : EricMillard\_114, BAKA\_122, Duke13\_117, Optimus\_113
- Track 118 : Courthouse\_113, Superphikiman\_115, Ariel\_118, Squint\_116
- Track 119 : Bagrid\_123, Kalah2\_114, DmpstrDiver\_123
- Track 120 : Gonephishing\_112, LittleE\_122
- Track 121 : Pound\_112
- Track 122 : Bobby\_115, Klein\_119
- Track 123 : Wanda\_122

- Track 124 : Nebkiss\_84, Gaia\_85
- Track 125 : GAL1\_54

**Summary of Final Annotations (See graph section above for start numbers):**

The start number called the most often in the published annotations is 64, it was called in 190 of the 293 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alexphander\_69, AmiCi24\_29, ArcusAngelus\_67, Ardmore\_57, Atlantica\_30, Aubs\_65, Avani\_73, Babushka\_27, Batiatus\_63, Beakin\_66, Bipolar\_65, Blarby\_78, Blexus\_63, BlueCrab\_66, BobaPhett\_69, Bobi\_69, BodEinwohner17\_66, Boomer\_70, Brocalys\_60, Brushbloom\_67, Burwell21\_63, BuzzLyseyear\_71, ByChance\_58, Byougenkin\_65, Cabrinians\_66, CaptainTrips\_63, Che8\_70, Che9d\_75, CheesePuff\_74, Chevrolet\_70, Chuckly\_68, Clifton\_60, Cornie\_63, Crumble\_60, DLane\_60, DRBy19\_69, DaWorst\_65, DanHam62\_30, Dante\_66, DeadP\_72, Deb65\_60, DillTech15\_63, DirtMcGirt\_64, DoRead\_69, Donkeykong\_68, Doomslug\_74, DosHalletts\_67, DotProduct\_60, Doug\_67, Drago\_62, Eish\_68, EleanorGeorge\_67, Emma\_67, Emmaloid\_67, Empress\_64, Enby\_66, Eradicator\_58, Estave1\_70, Fancypants\_68, Fastidio\_66, Filuzino\_63, Flathead\_66, Florinda\_76, FreddyB\_66, GUmbie\_63, Galactic\_64, Gandolph\_68, Geralt\_60, GigiOuiOui\_61, Girafales\_73, Girr\_63, Glotell\_31, Gorge\_69, Grimmer\_75, Guppsters\_66, Hades\_66, HamCheese\_30, Hamulus\_65, Hegedechwinu\_65, Hlubikazi\_61, IbOuu\_65, Ibhuesi\_65, IrishSherpFalk\_66, Jabbawokkie\_80, JalFarm20\_78, James\_69, Jant\_69, Juice456\_66, Juno112\_29, Karhdo\_64, Kenuha5\_63, Kersh\_67, Kimberlium\_70, Koella\_59, KristaRAM\_68, LastJedi\_59, Leona\_29, Leozinho\_64, LilMoolah\_64, Lizziana\_71, Llij\_61, Lorde\_65, LunaBlu\_67, LunaStella\_65, MadMen\_65, Madiba\_66, Mahavrat\_62, Mandlovu\_61, Mantra\_62, Maravista\_67, Martik\_65, Mattes\_69, Megan\_52, Melissauren88\_63, MilleniumForce\_68, MinionDave\_64, Minnie\_68, MisterCuddles\_63, Moonbeam\_64, Mova\_69, Mozy\_75, Ms6\_62, MulchExplorer\_73, Mutaforma13\_71, Nicole72\_53, Nimbo\_59, Nitzel\_62, Nivrat\_62, NormanBulbieJr\_65, Ogopogo\_71, OldBen\_63, OlympiaSaint\_67, Ovechkin\_65, OwlsT2W\_65, PMC\_62, Pacc40\_59, Phalconet\_63, Phanphagia\_61, Phatniss\_63, PhesterPotato\_65, Philus\_69, PhilipPhlop\_65, PhluffyCoco\_30, Pippy\_64, Plumbus\_68, Pollywog\_66, PopTart\_59, Priscilla\_65, QuickMath\_69, Quico\_73, Radiance\_64, Ramsey\_64, RedFox\_30, Renaud18\_75, Renna12\_29, Rialto\_70, Rita\_66, Rockne\_66, RockyHorror\_66, Royals2015\_68, Ruby\_61, SG4\_62, Saal\_67, Sandalphon\_66, SassyB\_59, Seagreen\_64, Shauna1\_63, ShiLan\_64, ShowerHandel\_68, SiSi\_63, Slim\_67, Soul22\_71, Spartacus\_67, Spikelee\_72, StAnnes\_63, Starceвич\_65, Strokeseat\_61, SuperGrey\_69, SwagPigglett\_70, TChen\_67, Taj\_70, Tchotchke\_64, ThetaBob\_73, Topiatin\_72, Totinger\_65, Tweety\_65, UncleRicky\_64, VRedHorse\_65, Violac\_66, Vivum\_66, Wee\_70, Whatsapiecost\_65, Whouxphf\_62, WillSterrel\_66, XFactor\_63, Yorick\_64, Zapner\_79, Zerg\_65, Zizzle\_69,

Genes that have the "Most Annotated" start but do not call it:

- AdoptaAdorbs\_29, AlexMinion\_32, Amphitrite\_30, Azaz\_30, Camara\_30, Fingolfin\_30, KHumphrey\_30, Laphuphu24k\_29, Oppalora\_29, Rattail\_30,

Genes that do not have the "Most Annotated" start:

- Abidatro\_29, Amanises\_32, Amelia\_32, Andrew\_31, Antares\_54, Antrice\_34, Ariadne\_62, Ariel\_118, BAKA\_122, Bagrid\_123, Basilisk\_30, BeagleBug\_53, BearBQ\_70, Bedetta\_34, Bobby\_115, BotCity\_75, BrazzalePHS\_53, Brynnie\_29, Busephilis\_53, Chickaboom\_30, ClearAsMud\_57, Colusalem\_32, Coral\_31, Cote\_33, Courthouse\_113, Cranjis\_55, CrazyRich\_53, Crisis\_55, Cygnet\_31, Daob\_33, DmpstrDiver\_123, Duke13\_117, Eesa\_28, Ejimix\_117, EricMillard\_114, Fireman\_56, GAL1\_54, Gaia\_85, Galaxy\_30, Ganandorf\_53, Gina\_56, Glorp\_55, Gonephishing\_112, Gravel\_31, Halley\_125, HannahPhantana\_32, Hermeonysus\_53, Honeyfin\_55, Hughesyang\_122, Jamun\_28, Jefe\_54, Jerole\_32, Jollipop\_54, Juniper1\_65, KaiHaiDragon\_54, Kalah2\_114, KendraB23\_32, Kepler\_32, Klein\_119, Kowalski\_53, Kuleana\_32, LittleE\_122, LittleFortune\_55, LittleTokyo\_32, Lucretia\_54, Lunar\_32, Margaery\_51, Melons\_32, Merry\_, Metamorphoo\_56, Minerva\_120, Nebkiss\_84, Niblet\_27, NoodlelyBoi\_55, Onika\_53, Optimus\_113, Orcanus\_29, OtsoOtso\_32, Paschalis\_53, Pelletreau\_31, Phabuloso\_75, PhedwardCullen\_52, PhirstandPhine\_34, Phorgeous\_53, Phrancesco\_54, PierreOrion\_54, Pineda\_33, PiperSansNom\_54, Piperis\_54, Polka\_31, Pound\_112, Pulchra\_55, Quhwah\_57, Ramiel05\_53, Redno2\_116, RobsFeet\_57, Rockwell\_53, Ruchi\_29, Savannah\_53, Scumberland\_55, Shotgun\_53, Shrubaron\_56, SirFrank\_54, Skugga\_53, Smarties\_62, Squint\_116, Sunny\_, Superphikiman\_115, TaylorSipht\_29, Teamocil\_56, ThreeRngTarjay\_118, Toad24\_31, Tyumbra\_54, Vulpecula\_29, Wanda\_122, Westrich\_31, WileyE\_30, Yeti\_54, Zapato\_53, Zelink\_117, Zhuangyuan\_34, Zixiang\_27,

### Summary by start number:

#### Start 49:

- Found in 8 of 331 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 1 of 293
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Kuleana\_32 (AS2),

#### Start 57:

- Found in 1 of 331 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 293
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Galaxy\_30 (AS1),

#### Start 58:

- Found in 5 of 331 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 293
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Abidatro\_29 (AS1),

#### Start 59:

- Found in 1 of 331 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 293
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Margaery\_51 (EI),

#### Start 60:

- Found in 1 of 331 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 293
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Juniper1\_65 (F1),

#### Start 61:

- Found in 13 of 331 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 12 of 293
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Busephilis\_53 (EC), Ganandorf\_53 (EC), Glorp\_55 (EC), Honeyfin\_55 (EC), Lucretia\_54 (EC), Merry\_ (EC), Phorgeous\_53 (EC), Phrancesco\_54 (EC), Piperis\_54 (EC), Pulchra\_55 (EC), SirFrank\_54 (EC), Sunny\_ (EC), Yeti\_54 (EC),

#### Start 62:

- Found in 34 of 331 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 23 of 293
- Called 79.4% of time when present
- Phage (with cluster) where this start called: Amelia\_32 (AS2), Basilisk\_30 (AS1), Bedetta\_34 (AS2), Brynnie\_29 (AS1), Chickaboom\_30 (AS1), Colusalem\_32 (AS2), Coral\_31 (AS2), Cote\_33 (AS2), Daob\_33 (AS2), Eesa\_28 (AS1), HannahPhantana\_32 (AS2), Jamun\_28 (AS1), Jerole\_32 (AS2), Kepler\_32 (AS2), Lunar\_32 (AS2), Melons\_32 (AS2), Niblet\_27 (AS1), Orcanus\_29 (AS1), OtsoOtso\_32 (AS2), PhirstandPhine\_34 (AS2), Pineda\_33 (AS2), Polka\_31 (AS2), Ruchi\_29 (AS1), TaylorSipht\_29 (AS1), Toad24\_31 (AS1), Vulpecula\_29 (AS1), WileyE\_30 (AS1),

#### Start 63:

- Found in 37 of 331 ( 11.2% ) of genes in pham
- Manual Annotations of this start: 30 of 293
- Called 97.3% of time when present
- Phage (with cluster) where this start called: Antares\_54 (EC), Ariadne\_62 (EC), BeagleBug\_53 (EC), BrazzalePHS\_53 (EC), ClearAsMud\_57 (EC), Cranjis\_55 (EC), CrazyRich\_53 (EC), Crisis\_55 (EC), Fireman\_56 (EC), Gina\_56 (EC), Hermeonysus\_53 (EC), Jefe\_54 (EC), Jollipop\_54 (EC), KaiHaiDragon\_54 (EC), Kowalski\_53 (EC), LittleFortune\_55 (EC), Metamorphoo\_56 (EC), NoodlelyBoi\_55 (EC), Onika\_53 (EC), Paschalis\_53 (EC), PhedwardCullen\_52 (EC), PierreOrion\_54 (EC), PiperSansNom\_54 (EC), Quhwah\_57 (EC), Ramiel05\_53 (EC), RobsFeet\_57 (EC), Rockwell\_53 (EC), Savannah\_53 (EC), Scumberland\_55 (EC), Shotgun\_53 (EC), Shrubaron\_56 (EC), Skugga\_53 (EC), Smarties\_62 (EC), Teamocil\_56 (EC), Tyumbra\_54 (EC), Zapato\_53 (EC),

#### Start 64:

- Found in 209 of 331 ( 63.1% ) of genes in pham
- Manual Annotations of this start: 190 of 293
- Called 95.2% of time when present
- Phage (with cluster) where this start called: Alexphander\_69 (F1), AmiCi24\_29 (AS3), ArcusAngelus\_67 (F1), Ardmore\_57 (F1), Atlantica\_30 (AS3), Aubs\_65 (F1), Avani\_73 (F2), Babushka\_27 (AS3), Batiatus\_63 (F1), Beakin\_66 (F1), Bipolar\_65 (F1), Blarby\_78 (F), Blexus\_63 (F1), BlueCrab\_66 (F1), BobaPhett\_69 (F1), Bobi\_69 (F1), BodEinwohner17\_66 (F1), Boomer\_70 (F1), Brocalys\_60 (F1), Brushbloom\_67 (F1), Burwell21\_63 (F1), BuzzLyseyear\_71 (F1), ByChance\_58 (F1), Byougenkin\_65 (F1), Cabrinians\_66 (F1), CaptainTrips\_63 (F1), Che8\_70 (F1), Che9d\_75 (F2), CheesePuff\_74 (F1), Chevrolet\_70 (F1), Chuckly\_68 (F1), Clifton\_60 (F1), Cornie\_63 (F5), Crumble\_60 (F1), DLane\_60 (F1), DRBy19\_69 (F1), DaWorst\_65 (F1), DanHam62\_30 (AS3), Dante\_66 (F1), DeadP\_72 (F1), Deb65\_60 (F1),

DillTech15\_63 (F1), DirtMcgirt\_64 (F1), DoRead\_69 (F1), Donkeykong\_68 (F1),  
 Doomslug\_74 (F), DosHalletts\_67 (F1), DotProduct\_60 (F1), Doug\_67 (F1),  
 Drago\_62 (F1), Eish\_68 (F1), EleanorGeorge\_67 (F1), Emma\_67 (F1), Emmaloid\_67  
 (F1), Empress\_64 (F1), Enby\_66 (F1), Eradicator\_58 (F1), Estave1\_70 (F1),  
 Fancypants\_68 (F1), Fastidio\_66 (F1), Filuzino\_63 (F1), Flathead\_66 (F1),  
 Florinda\_76 (F1), FreddyB\_66 (F1), GUmbie\_63 (F1), Galactic\_64 (F1), Gandalph\_68  
 (F1), Geralt\_60 (F1), GigiOuiOui\_61 (F1), Girafales\_73 (F1), Girr\_63 (F1), Glotell\_31  
 (AS3), Gorge\_69 (F1), Grimmer\_75 (F1), Guppsters\_66 (F1), Hades\_66 (F1),  
 HamCheese\_30 (AS3), Hamulus\_65 (F1), Hegedechwinu\_65 (F1), Hlubikazi\_61 (F1),  
 IbOuu\_65 (F1), Ibhubesi\_65 (F1), IrishSherpFalk\_66 (F1), Jabbawokkie\_80 (F2),  
 JalFarm20\_78 (F1), James\_69 (F1), Jant\_69 (F1), Juice456\_66 (F1), Juno112\_29  
 (AS3), Karhdo\_64 (F1), Kenuha5\_63 (F1), Kersh\_67 (F1), Kimberlium\_70 (F1),  
 Koella\_59 (F1), KristaRAM\_68 (F1), LastJedi\_59 (F1), Leona\_29 (AS3), Leozinho\_64  
 (F1), LilMoolah\_64 (F1), Lizziana\_71 (F1), Llij\_61 (F1), Lorde\_65 (F1), LunaBlu\_67  
 (F1), LunaStella\_65 (F4), MadMen\_65 (F1), Madiba\_66 (F1), Mahavrat\_62 (F1),  
 Mandlovu\_61 (F1), Mantra\_62 (F1), Maravista\_67 (F1), Martik\_65 (F1), Mattes\_69  
 (F1), Megan\_52 (EC), Melissauren88\_63 (F1), MilleniumForce\_68 (F1),  
 MinionDave\_64 (F1), Minnie\_68 (F1), MisterCuddles\_63 (F1), Moonbeam\_64 (F1),  
 Mova\_69 (F1), Mozy\_75 (F1), Ms6\_62 (F1), MulchExplorer\_73 (F1), Mutaforma13\_71  
 (F1), Nicole72\_53 (EC), Nimbo\_59 (F1), Nitzel\_62 (F1), Nivrat\_62 (F1),  
 NormanBulbieJr\_65 (F1), Ogopogo\_71 (F1), OldBen\_63 (F1), OlympiaSaint\_67 (F1),  
 Ovechkin\_65 (F1), OwlsT2W\_65 (F1), PMC\_62 (F1), Pacc40\_59 (F1), Phalconet\_63  
 (F1), Phanphagia\_61 (F1), Phatniss\_63 (F1), PhesterPhotato\_65 (F1), Philus\_69  
 (F1), PhilipPhlop\_65 (F1), PhluffyCoco\_30 (AS3), Pippy\_64 (F1), Plumbus\_68 (F1),  
 Pollywog\_66 (F1), PopTart\_59 (F1), Priscilla\_65 (F1), QuickMath\_69 (F1), Quico\_73  
 (F1), Radiance\_64 (F1), Ramsey\_64 (F1), RedFox\_30 (AS3), Renaud18\_75 (F4),  
 Renna12\_29 (AS3), Rialto\_70 (F1), Rita\_66 (F1), Rockne\_66 (F1), RockyHorror\_66  
 (F1), Royals2015\_68 (F1), Ruby\_61 (F1), SG4\_62 (F1), Saal\_67 (F1),  
 Sandalphon\_66 (F1), SassyB\_59 (F1), Seagreen\_64 (F1), Shauna1\_63 (F1),  
 ShiLan\_64 (F1), ShowerHandel\_68 (F1), SiSi\_63 (F1), Slim\_67 (F1), Soul22\_71 (F2),  
 Spartacus\_67 (F1), Spikelee\_72 (F1), StAnnes\_63 (F1), Starcevich\_65 (F1),  
 Strokeseat\_61 (F1), SuperGrey\_69 (F1), SwagPigglett\_70 (F1), TChen\_67 (F4),  
 Taj\_70 (F1), Tchotchke\_64 (F1), ThetaBob\_73 (F4), Topiatin\_72 (F1), Totinger\_65  
 (F1), Tweety\_65 (F1), UncleRicky\_64 (F1), VRedHorse\_65 (F1), Violac\_66 (F1),  
 Vivum\_66 (F1), Wee\_70 (F1), Whatsapiecost\_65 (F1), Whouxphf\_62 (F1),  
 WillSterrel\_66 (F1), XFactor\_63 (F1), Yorick\_64 (F1), Zapner\_79 (F2), Zerg\_65 (F1),  
 Zizzle\_69 (F1),

#### Start 65:

- Found in 3 of 331 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 3 of 293
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antrice\_34 (AS2), Cygnet\_31 (AS2), Zhuangyuan\_34 (AS2),

#### Start 67:

- Found in 32 of 331 ( 9.7% ) of genes in pham
- Manual Annotations of this start: 29 of 293
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Andrew\_31 (AS3), Ariel\_118 (J), BAKA\_122 (J), Bagrid\_123 (J), BearBQ\_70 (DN), Bobby\_115 (J), BotCity\_75 (DN), Courthouse\_113 (J), DmpstrDiver\_123 (J), Duke13\_117 (J), Ejimix\_117 (J), EricMillard\_114 (J), GAL1\_54 (singleton), Gaia\_85 (X), Gonephishing\_112 (J),

Halley\_125 (J), Hughesyang\_122 (J), Kalah2\_114 (J), Klein\_119 (J), LittleE\_122 (J), LittleTokyo\_32 (AS2), Minerva\_120 (J), Nebkiss\_84 (X), Optimus\_113 (J), Phabuloso\_75 (DN1), Pound\_112 (J), Redno2\_116 (J), Squint\_116 (J), Superphikiman\_115 (J), ThreeRngTarjay\_118 (J), Wanda\_122 (J), Zelink\_117 (J),

Start 70:

- Found in 36 of 331 ( 10.9% ) of genes in pham
- Manual Annotations of this start: 1 of 293
- Called 27.8% of time when present
- Phage (with cluster) where this start called: AdoptaAdorbs\_29 (AS3), AlexMinion\_32 (AS3), Amphitrite\_30 (AS3), Azaz\_30 (AS3), Camara\_30 (AS3), Fingolfin\_30 (AS3), KHumphrey\_30 (AS3), Laphuphu24k\_29 (AS3), Oppalora\_29 (AS3), Rattail\_30 (AS3),

Start 80:

- Found in 72 of 331 ( 21.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Amanises\_32 (AS1), Gravel\_31 (AS1), KendraB23\_32 (AS1), Pelletreau\_31 (AS1), Westrich\_31 (AS1), Zixiang\_27 (AS1),

### **Summary by clusters:**

There are 15 clusters represented in this pham: AS3, F1, F2, F4, F5, AS2, J, AS1, EC, DN1, F, X, EI, singleton, DN,

Info for manual annotations of cluster AS1:

- Start number 57 was manually annotated 1 time for cluster AS1.
- Start number 58 was manually annotated 1 time for cluster AS1.
- Start number 62 was manually annotated 11 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 49 was manually annotated 1 time for cluster AS2.
- Start number 62 was manually annotated 12 times for cluster AS2.
- Start number 65 was manually annotated 3 times for cluster AS2.
- Start number 67 was manually annotated 1 time for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 64 was manually annotated 11 times for cluster AS3.
- Start number 67 was manually annotated 1 time for cluster AS3.
- Start number 70 was manually annotated 1 time for cluster AS3.

Info for manual annotations of cluster DN:

- Start number 67 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 67 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster EC:

- Start number 61 was manually annotated 12 times for cluster EC.
- Start number 63 was manually annotated 30 times for cluster EC.
- Start number 64 was manually annotated 2 times for cluster EC.

Info for manual annotations of cluster EI:

- Start number 59 was manually annotated 1 time for cluster EI.

Info for manual annotations of cluster F1:

- Start number 60 was manually annotated 1 time for cluster F1.
- Start number 64 was manually annotated 167 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 64 was manually annotated 5 times for cluster F2.

Info for manual annotations of cluster F4:

- Start number 64 was manually annotated 4 times for cluster F4.

Info for manual annotations of cluster F5:

- Start number 64 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster J:

- Start number 67 was manually annotated 22 times for cluster J.

Info for manual annotations of cluster X:

- Start number 67 was manually annotated 2 times for cluster X.

### ***Gene Information:***

Gene: Abidatro\_29 Start: 21393, Stop: 20860, Start Num: 58

Candidate Starts for Abidatro\_29:

(35, 21495), (Start: 58 @21393 has 1 MA's), (Start: 62 @21390 has 23 MA's), (Start: 70 @21357 has 1 MA's), (80, 21261), (94, 21105), (96, 21096), (111, 20922), (112, 20895),

Gene: AdoptaAdorbs\_29 Start: 20838, Stop: 20518, Start Num: 70

Candidate Starts for AdoptaAdorbs\_29:

(5, 21273), (19, 21123), (48, 20928), (Start: 64 @20871 has 190 MA's), (Start: 70 @20838 has 1 MA's), (80, 20742),

Gene: AlexMinion\_32 Start: 21027, Stop: 20707, Start Num: 70

Candidate Starts for AlexMinion\_32:

(19, 21312), (48, 21117), (Start: 64 @21060 has 190 MA's), (Start: 70 @21027 has 1 MA's), (80, 20931), (86, 20880),

Gene: Alexphander\_69 Start: 42282, Stop: 42644, Start Num: 64

Candidate Starts for Alexphander\_69:

(Start: 64 @42282 has 190 MA's), (98, 42582), (106, 42627),

Gene: Amanises\_32 Start: 22134, Stop: 21769, Start Num: 80

Candidate Starts for Amanises\_32:

(41, 22350), (Start: 62 @22263 has 23 MA's), (80, 22134), (84, 22089), (86, 22083), (94, 21978), (96, 21969), (111, 21822),

Gene: Amelia\_32 Start: 21518, Stop: 21165, Start Num: 62

Candidate Starts for Amelia\_32:

(31, 21644), (41, 21605), (Start: 62 @21518 has 23 MA's), (80, 21389), (84, 21344), (96, 21224),

Gene: AmiCi24\_29 Start: 20870, Stop: 20517, Start Num: 64

Candidate Starts for AmiCi24\_29:

(5, 21272), (19, 21122), (48, 20927), (Start: 64 @20870 has 190 MA's), (Start: 70 @20837 has 1 MA's), (80, 20741),

Gene: Amphitrite\_30 Start: 20836, Stop: 20516, Start Num: 70

Candidate Starts for Amphitrite\_30:

(5, 21271), (19, 21121), (48, 20926), (Start: 64 @20869 has 190 MA's), (Start: 70 @20836 has 1 MA's), (80, 20740),

Gene: Andrew\_31 Start: 20815, Stop: 20462, Start Num: 67

Candidate Starts for Andrew\_31:

(9, 21166), (48, 20890), (Start: 67 @20815 has 29 MA's), (80, 20686), (96, 20521),

Gene: Antares\_54 Start: 35918, Stop: 36367, Start Num: 63

Candidate Starts for Antares\_54:

(Start: 63 @35918 has 30 MA's), (86, 36077), (94, 36182), (95, 36188), (104, 36245), (110, 36362),

Gene: Antrice\_34 Start: 22599, Stop: 22243, Start Num: 65

Candidate Starts for Antrice\_34:

(31, 22743), (48, 22668), (Start: 65 @22599 has 3 MA's), (Start: 70 @22563 has 1 MA's), (78, 22491), (80, 22467),

Gene: ArcusAngelus\_67 Start: 42632, Stop: 42994, Start Num: 64

Candidate Starts for ArcusAngelus\_67:

(Start: 64 @42632 has 190 MA's), (82, 42791), (98, 42932), (99, 42935), (106, 42977),

Gene: Ardmore\_57 Start: 40049, Stop: 40405, Start Num: 64

Candidate Starts for Ardmore\_57:

(Start: 64 @40049 has 190 MA's), (98, 40349), (99, 40352),

Gene: Ariadne\_62 Start: 37502, Stop: 37951, Start Num: 63

Candidate Starts for Ariadne\_62:

(51, 37460), (Start: 63 @37502 has 30 MA's), (72, 37553), (86, 37661), (94, 37766), (95, 37772), (110, 37946),

Gene: Ariel\_118 Start: 64179, Stop: 64499, Start Num: 67

Candidate Starts for Ariel\_118:

(Start: 67 @64179 has 29 MA's), (74, 64248), (80, 64290), (91, 64407),

Gene: Atlantica\_30 Start: 20871, Stop: 20518, Start Num: 64

Candidate Starts for Atlantica\_30:

(5, 21273), (19, 21123), (48, 20928), (Start: 64 @20871 has 190 MA's), (Start: 70 @20838 has 1 MA's), (80, 20742),

Gene: Aubs\_65 Start: 42690, Stop: 43052, Start Num: 64

Candidate Starts for Aubs\_65:

(35, 42573), (Start: 64 @42690 has 190 MA's), (82, 42849), (98, 42990), (106, 43035),

Gene: Avani\_73 Start: 42666, Stop: 43022, Start Num: 64

Candidate Starts for Avani\_73:

(Start: 64 @42666 has 190 MA's), (98, 42966), (99, 42969),

Gene: Azaz\_30 Start: 20910, Stop: 20590, Start Num: 70

Candidate Starts for Azaz\_30:

(19, 21195), (48, 21000), (Start: 64 @20943 has 190 MA's), (Start: 70 @20910 has 1 MA's), (80, 20814), (86, 20763),

Gene: BAKA\_122 Start: 67774, Stop: 68106, Start Num: 67

Candidate Starts for BAKA\_122:

(Start: 67 @67774 has 29 MA's), (74, 67843), (85, 67933), (86, 67936), (91, 68002),

Gene: Babushka\_27 Start: 20785, Stop: 20432, Start Num: 64

Candidate Starts for Babushka\_27:

(19, 21037), (48, 20842), (Start: 64 @20785 has 190 MA's), (Start: 70 @20752 has 1 MA's), (80, 20656), (86, 20605), (96, 20491), (100, 20467),

Gene: Bagrid\_123 Start: 67735, Stop: 68064, Start Num: 67

Candidate Starts for Bagrid\_123:

(Start: 67 @67735 has 29 MA's), (74, 67804), (91, 67963), (102, 68047),

Gene: Basilisk\_30 Start: 22338, Stop: 21847, Start Num: 62

Candidate Starts for Basilisk\_30:

(Start: 62 @22338 has 23 MA's), (Start: 70 @22305 has 1 MA's), (78, 22233), (80, 22209), (84, 22164), (96, 22044),

Gene: Batiatus\_63 Start: 41925, Stop: 42281, Start Num: 64

Candidate Starts for Batiatus\_63:

(Start: 64 @41925 has 190 MA's), (98, 42225), (99, 42228),

Gene: BeagleBug\_53 Start: 35699, Stop: 36148, Start Num: 63

Candidate Starts for BeagleBug\_53:

(Start: 63 @35699 has 30 MA's), (86, 35858), (94, 35963), (95, 35969), (104, 36026), (110, 36143),

Gene: Beakin\_66 Start: 41229, Stop: 41591, Start Num: 64

Candidate Starts for Beakin\_66:

(Start: 64 @41229 has 190 MA's), (82, 41388), (98, 41529), (99, 41532), (106, 41574),

Gene: BearBQ\_70 Start: 44365, Stop: 44712, Start Num: 67

Candidate Starts for BearBQ\_70:

(39, 44251), (Start: 58 @44341 has 1 MA's), (Start: 67 @44365 has 29 MA's), (68, 44386), (71, 44404), (72, 44413), (80, 44488), (91, 44605), (94, 44635), (99, 44665), (102, 44692), (105, 44704),

Gene: Bedetta\_34 Start: 21656, Stop: 21303, Start Num: 62

Candidate Starts for Bedetta\_34:

(31, 21782), (41, 21743), (Start: 62 @21656 has 23 MA's), (80, 21527), (84, 21482), (96, 21362),

Gene: Bipolar\_65 Start: 42690, Stop: 43052, Start Num: 64

Candidate Starts for Bipolar\_65:

(Start: 64 @42690 has 190 MA's), (82, 42849), (98, 42990), (106, 43035),

Gene: Blarby\_78 Start: 44162, Stop: 44503, Start Num: 64

Candidate Starts for Blarby\_78:

(54, 44147), (Start: 64 @44162 has 190 MA's), (98, 44462), (99, 44465),

Gene: Blexus\_63 Start: 42819, Stop: 43181, Start Num: 64  
Candidate Starts for Blexus\_63:  
(Start: 64 @42819 has 190 MA's), (82, 42978), (98, 43119), (106, 43164),

Gene: BlueCrab\_66 Start: 43528, Stop: 43884, Start Num: 64  
Candidate Starts for BlueCrab\_66:  
(Start: 64 @43528 has 190 MA's), (84, 43702), (98, 43828),

Gene: BobaPhett\_69 Start: 45114, Stop: 45476, Start Num: 64  
Candidate Starts for BobaPhett\_69:  
(Start: 64 @45114 has 190 MA's), (82, 45273), (84, 45288), (98, 45414), (106, 45459),

Gene: Bobby\_115 Start: 69193, Stop: 69522, Start Num: 67  
Candidate Starts for Bobby\_115:  
(Start: 67 @69193 has 29 MA's), (74, 69262), (85, 69352), (86, 69355), (91, 69421), (102, 69505),

Gene: Bobi\_69 Start: 43528, Stop: 43884, Start Num: 64  
Candidate Starts for Bobi\_69:  
(Start: 64 @43528 has 190 MA's), (98, 43828), (99, 43831),

Gene: BodEinwohner17\_66 Start: 42524, Stop: 42886, Start Num: 64  
Candidate Starts for BodEinwohner17\_66:  
(38, 42419), (39, 42425), (Start: 49 @42479 has 1 MA's), (Start: 64 @42524 has 190 MA's), (68, 42557), (98, 42824), (99, 42827), (106, 42869),

Gene: Boomer\_70 Start: 44186, Stop: 44542, Start Num: 64  
Candidate Starts for Boomer\_70:  
(Start: 64 @44186 has 190 MA's), (98, 44486), (99, 44489),

Gene: BotCity\_75 Start: 44601, Stop: 44948, Start Num: 67  
Candidate Starts for BotCity\_75:  
(39, 44487), (Start: 58 @44577 has 1 MA's), (Start: 67 @44601 has 29 MA's), (68, 44622), (71, 44640), (72, 44649), (80, 44724), (91, 44841), (94, 44871), (99, 44901), (102, 44928), (105, 44940),

Gene: BrazzalePHS\_53 Start: 35714, Stop: 36163, Start Num: 63  
Candidate Starts for BrazzalePHS\_53:  
(15, 35405), (16, 35408), (29, 35549), (42, 35621), (Start: 63 @35714 has 30 MA's), (94, 35978), (95, 35984), (104, 36041), (110, 36158),

Gene: Brocalys\_60 Start: 39296, Stop: 39658, Start Num: 64  
Candidate Starts for Brocalys\_60:  
(35, 39179), (Start: 64 @39296 has 190 MA's), (82, 39455), (98, 39596), (106, 39641),

Gene: Brushbloom\_67 Start: 42857, Stop: 43213, Start Num: 64  
Candidate Starts for Brushbloom\_67:  
(Start: 64 @42857 has 190 MA's), (98, 43157), (99, 43160),

Gene: Brynnie\_29 Start: 22216, Stop: 21725, Start Num: 62  
Candidate Starts for Brynnie\_29:  
(48, 22267), (Start: 62 @22216 has 23 MA's), (Start: 70 @22183 has 1 MA's), (78, 22111), (80, 22087), (84, 22042), (96, 21922),

Gene: Burwell21\_63 Start: 42397, Stop: 42759, Start Num: 64  
Candidate Starts for Burwell21\_63:  
(35, 42280), (Start: 64 @42397 has 190 MA's), (82, 42556), (98, 42697), (106, 42742),

Gene: Busephilis\_53 Start: 35622, Stop: 36074, Start Num: 61  
Candidate Starts for Busephilis\_53:  
(Start: 61 @35622 has 12 MA's), (72, 35676), (86, 35784), (94, 35889), (104, 35952), (110, 36069),

Gene: BuzzLyseyear\_71 Start: 43599, Stop: 43961, Start Num: 64  
Candidate Starts for BuzzLyseyear\_71:  
(Start: 64 @43599 has 190 MA's), (82, 43758), (98, 43899), (99, 43902), (106, 43944),

Gene: ByChance\_58 Start: 38456, Stop: 38818, Start Num: 64  
Candidate Starts for ByChance\_58:  
(Start: 64 @38456 has 190 MA's), (82, 38615), (84, 38630), (98, 38756), (106, 38801),

Gene: Byougenkin\_65 Start: 42188, Stop: 42544, Start Num: 64  
Candidate Starts for Byougenkin\_65:  
(Start: 64 @42188 has 190 MA's), (98, 42488), (99, 42491),

Gene: Cabrinians\_66 Start: 42475, Stop: 42837, Start Num: 64  
Candidate Starts for Cabrinians\_66:  
(Start: 64 @42475 has 190 MA's), (84, 42649), (98, 42775), (106, 42820),

Gene: Camara\_30 Start: 20839, Stop: 20519, Start Num: 70  
Candidate Starts for Camara\_30:  
(5, 21274), (19, 21124), (48, 20929), (Start: 64 @20872 has 190 MA's), (Start: 70 @20839 has 1 MA's),  
(80, 20743),

Gene: CaptainTrips\_63 Start: 42210, Stop: 42572, Start Num: 64  
Candidate Starts for CaptainTrips\_63:  
(35, 42093), (Start: 64 @42210 has 190 MA's), (82, 42369), (98, 42510), (106, 42555),

Gene: Che8\_70 Start: 45095, Stop: 45457, Start Num: 64  
Candidate Starts for Che8\_70:  
(Start: 64 @45095 has 190 MA's), (82, 45254), (98, 45395), (99, 45398), (106, 45440),

Gene: Che9d\_75 Start: 42864, Stop: 43220, Start Num: 64  
Candidate Starts for Che9d\_75:  
(Start: 64 @42864 has 190 MA's), (82, 43023), (98, 43164), (99, 43167),

Gene: Cheesepuff\_74 Start: 44480, Stop: 44842, Start Num: 64  
Candidate Starts for Cheesepuff\_74:  
(Start: 64 @44480 has 190 MA's), (82, 44639), (98, 44780), (106, 44825),

Gene: Chevrolet\_70 Start: 42633, Stop: 42995, Start Num: 64  
Candidate Starts for Chevrolet\_70:  
(Start: 64 @42633 has 190 MA's), (98, 42933), (99, 42936), (106, 42978),

Gene: Chickaboom\_30 Start: 21353, Stop: 20883, Start Num: 62  
Candidate Starts for Chickaboom\_30:  
(31, 21479), (41, 21440), (Start: 62 @21353 has 23 MA's), (Start: 70 @21320 has 1 MA's), (78, 21248),  
(80, 21224), (94, 21068),

Gene: Chuckly\_68 Start: 42655, Stop: 43011, Start Num: 64

Candidate Starts for Chuckly\_68:

(Start: 64 @42655 has 190 MA's), (98, 42955), (99, 42958),

Gene: ClearAsMud\_57 Start: 36175, Stop: 36624, Start Num: 63

Candidate Starts for ClearAsMud\_57:

(14, 35857), (23, 35944), (24, 35962), (36, 36061), (48, 36115), (Start: 63 @36175 has 30 MA's), (86, 36334), (87, 36370), (92, 36424), (94, 36439), (95, 36445), (104, 36502), (110, 36619),

Gene: Clifton\_60 Start: 39647, Stop: 40009, Start Num: 64

Candidate Starts for Clifton\_60:

(35, 39530), (Start: 64 @39647 has 190 MA's), (82, 39806), (98, 39947), (106, 39992),

Gene: Colusalem\_32 Start: 21495, Stop: 21142, Start Num: 62

Candidate Starts for Colusalem\_32:

(31, 21621), (41, 21582), (Start: 62 @21495 has 23 MA's), (80, 21366), (84, 21321), (96, 21201),

Gene: Coral\_31 Start: 21357, Stop: 21004, Start Num: 62

Candidate Starts for Coral\_31:

(31, 21483), (41, 21444), (Start: 62 @21357 has 23 MA's), (80, 21228), (84, 21183), (96, 21063),

Gene: Cornie\_63 Start: 40942, Stop: 41304, Start Num: 64

Candidate Starts for Cornie\_63:

(Start: 64 @40942 has 190 MA's), (82, 41101), (98, 41242), (106, 41287),

Gene: Cote\_33 Start: 21834, Stop: 21481, Start Num: 62

Candidate Starts for Cote\_33:

(31, 21960), (41, 21921), (Start: 62 @21834 has 23 MA's), (80, 21705), (84, 21660), (96, 21540),

Gene: Courthouse\_113 Start: 63779, Stop: 64099, Start Num: 67

Candidate Starts for Courthouse\_113:

(Start: 67 @63779 has 29 MA's), (74, 63848), (80, 63890), (91, 64007),

Gene: Cranjjs\_55 Start: 35873, Stop: 36322, Start Num: 63

Candidate Starts for Cranjjs\_55:

(4, 35447), (15, 35564), (16, 35567), (29, 35708), (42, 35780), (Start: 63 @35873 has 30 MA's), (94, 36137), (95, 36143), (104, 36200), (110, 36317),

Gene: CrazyRich\_53 Start: 35682, Stop: 36131, Start Num: 63

Candidate Starts for CrazyRich\_53:

(15, 35373), (16, 35376), (29, 35517), (42, 35589), (Start: 63 @35682 has 30 MA's), (86, 35841), (94, 35946), (95, 35952), (104, 36009), (110, 36126),

Gene: Crisis\_55 Start: 35673, Stop: 36122, Start Num: 63

Candidate Starts for Crisis\_55:

(15, 35364), (16, 35367), (29, 35508), (42, 35580), (Start: 63 @35673 has 30 MA's), (86, 35832), (94, 35937), (95, 35943), (104, 36000), (110, 36117),

Gene: Crumble\_60 Start: 38411, Stop: 38773, Start Num: 64

Candidate Starts for Crumble\_60:

(Start: 64 @38411 has 190 MA's), (82, 38570), (84, 38585), (98, 38711), (106, 38756),

Gene: Cygnet\_31 Start: 22172, Stop: 21816, Start Num: 65  
Candidate Starts for Cygnet\_31:  
(31, 22316), (48, 22241), (Start: 65 @22172 has 3 MA's), (Start: 70 @22136 has 1 MA's), (75, 22097),  
(78, 22064), (80, 22040),

Gene: DLane\_60 Start: 40555, Stop: 40917, Start Num: 64  
Candidate Starts for DLane\_60:  
(Start: 64 @40555 has 190 MA's), (98, 40855), (99, 40858), (106, 40900),

Gene: DRBy19\_69 Start: 43907, Stop: 44263, Start Num: 64  
Candidate Starts for DRBy19\_69:  
(35, 43790), (Start: 64 @43907 has 190 MA's), (84, 44081), (98, 44207), (99, 44210), (106, 44246),

Gene: DaWorst\_65 Start: 42022, Stop: 42384, Start Num: 64  
Candidate Starts for DaWorst\_65:  
(Start: 64 @42022 has 190 MA's), (82, 42181), (98, 42322), (106, 42367),

Gene: DanHam62\_30 Start: 20871, Stop: 20518, Start Num: 64  
Candidate Starts for DanHam62\_30:  
(5, 21273), (19, 21123), (48, 20928), (Start: 64 @20871 has 190 MA's), (Start: 70 @20838 has 1 MA's),  
(80, 20742),

Gene: Dante\_66 Start: 41796, Stop: 42161, Start Num: 64  
Candidate Starts for Dante\_66:  
(Start: 64 @41796 has 190 MA's), (82, 41955), (98, 42096), (101, 42120),

Gene: Daob\_33 Start: 21852, Stop: 21499, Start Num: 62  
Candidate Starts for Daob\_33:  
(31, 21978), (41, 21939), (Start: 62 @21852 has 23 MA's), (80, 21723), (96, 21558),

Gene: DeadP\_72 Start: 44907, Stop: 45269, Start Num: 64  
Candidate Starts for DeadP\_72:  
(54, 44892), (Start: 64 @44907 has 190 MA's), (98, 45207), (99, 45210), (106, 45252),

Gene: Deb65\_60 Start: 41299, Stop: 41661, Start Num: 64  
Candidate Starts for Deb65\_60:  
(38, 41194), (39, 41200), (Start: 49 @41254 has 1 MA's), (Start: 64 @41299 has 190 MA's), (68,  
41332), (98, 41599), (99, 41602), (106, 41644),

Gene: DillTech15\_63 Start: 40922, Stop: 41284, Start Num: 64  
Candidate Starts for DillTech15\_63:  
(55, 40907), (Start: 64 @40922 has 190 MA's), (98, 41222), (106, 41267),

Gene: DirtMcgirt\_64 Start: 40554, Stop: 40916, Start Num: 64  
Candidate Starts for DirtMcgirt\_64:  
(Start: 64 @40554 has 190 MA's), (82, 40713), (98, 40854), (99, 40857), (106, 40899),

Gene: DmpstrDiver\_123 Start: 68024, Stop: 68353, Start Num: 67  
Candidate Starts for DmpstrDiver\_123:  
(Start: 67 @68024 has 29 MA's), (74, 68093), (91, 68252), (102, 68336),

Gene: DoRead\_69 Start: 42341, Stop: 42703, Start Num: 64  
Candidate Starts for DoRead\_69:

(44, 42263), (45, 42272), (52, 42305), (Start: 64 @42341 has 190 MA's), (106, 42686),

Gene: Donkeykong\_68 Start: 44468, Stop: 44830, Start Num: 64

Candidate Starts for Donkeykong\_68:

(Start: 64 @44468 has 190 MA's), (98, 44768), (99, 44771), (106, 44813),

Gene: Doomslug\_74 Start: 42992, Stop: 43354, Start Num: 64

Candidate Starts for Doomslug\_74:

(35, 42875), (Start: 64 @42992 has 190 MA's), (82, 43151), (98, 43292), (99, 43295), (106, 43337),

Gene: DosHalletts\_67 Start: 43303, Stop: 43665, Start Num: 64

Candidate Starts for DosHalletts\_67:

(Start: 64 @43303 has 190 MA's), (82, 43462), (98, 43603), (99, 43606), (106, 43648),

Gene: DotProduct\_60 Start: 40802, Stop: 41164, Start Num: 64

Candidate Starts for DotProduct\_60:

(Start: 64 @40802 has 190 MA's), (98, 41102), (99, 41105), (106, 41147),

Gene: Doug\_67 Start: 42635, Stop: 42997, Start Num: 64

Candidate Starts for Doug\_67:

(Start: 64 @42635 has 190 MA's), (98, 42935), (106, 42980),

Gene: Drago\_62 Start: 40557, Stop: 40919, Start Num: 64

Candidate Starts for Drago\_62:

(Start: 64 @40557 has 190 MA's), (82, 40716), (98, 40857), (99, 40860), (106, 40902),

Gene: Duke13\_117 Start: 65442, Stop: 65774, Start Num: 67

Candidate Starts for Duke13\_117:

(Start: 67 @65442 has 29 MA's), (74, 65511), (85, 65601), (86, 65604), (91, 65670),

Gene: Eesa\_28 Start: 22106, Stop: 21612, Start Num: 62

Candidate Starts for Eesa\_28:

(41, 22193), (Start: 62 @22106 has 23 MA's), (80, 21977), (84, 21932), (86, 21926), (94, 21821), (96, 21812), (111, 21665),

Gene: Eish\_68 Start: 42537, Stop: 42899, Start Num: 64

Candidate Starts for Eish\_68:

(Start: 64 @42537 has 190 MA's), (82, 42696), (98, 42837), (99, 42840), (106, 42882),

Gene: Ejimix\_117 Start: 69176, Stop: 69505, Start Num: 67

Candidate Starts for Ejimix\_117:

(Start: 67 @69176 has 29 MA's), (74, 69245), (85, 69335), (86, 69338), (91, 69404), (102, 69488),

Gene: EleanorGeorge\_67 Start: 43317, Stop: 43673, Start Num: 64

Candidate Starts for EleanorGeorge\_67:

(Start: 64 @43317 has 190 MA's), (82, 43476), (98, 43617), (99, 43620),

Gene: Emma\_67 Start: 42045, Stop: 42407, Start Num: 64

Candidate Starts for Emma\_67:

(Start: 64 @42045 has 190 MA's), (69, 42087), (82, 42204), (98, 42345), (106, 42390),

Gene: Emmaloid\_67 Start: 43062, Stop: 43424, Start Num: 64

Candidate Starts for Emmaloid\_67:

(Start: 64 @43062 has 190 MA's), (98, 43362), (99, 43365), (106, 43407),

Gene: Empress\_64 Start: 42743, Stop: 43105, Start Num: 64

Candidate Starts for Empress\_64:

(38, 42638), (39, 42644), (Start: 49 @42698 has 1 MA's), (Start: 64 @42743 has 190 MA's), (68, 42776), (98, 43043), (99, 43046), (106, 43088),

Gene: Enby\_66 Start: 40833, Stop: 41195, Start Num: 64

Candidate Starts for Enby\_66:

(Start: 64 @40833 has 190 MA's), (82, 40992), (98, 41133), (99, 41136), (106, 41178),

Gene: Eradicator\_58 Start: 40449, Stop: 40811, Start Num: 64

Candidate Starts for Eradicator\_58:

(Start: 64 @40449 has 190 MA's), (82, 40608), (98, 40749), (99, 40752), (106, 40794),

Gene: EricMillard\_114 Start: 67411, Stop: 67743, Start Num: 67

Candidate Starts for EricMillard\_114:

(Start: 67 @67411 has 29 MA's), (74, 67480), (85, 67570), (86, 67573), (91, 67639),

Gene: Estave1\_70 Start: 44873, Stop: 45235, Start Num: 64

Candidate Starts for Estave1\_70:

(Start: 64 @44873 has 190 MA's), (82, 45032), (84, 45047), (98, 45173), (99, 45176), (106, 45218),

Gene: Fancypants\_68 Start: 43057, Stop: 43419, Start Num: 64

Candidate Starts for Fancypants\_68:

(55, 43042), (Start: 64 @43057 has 190 MA's), (82, 43216), (98, 43357), (106, 43402),

Gene: Fastidio\_66 Start: 41072, Stop: 41428, Start Num: 64

Candidate Starts for Fastidio\_66:

(54, 41057), (Start: 64 @41072 has 190 MA's), (82, 41231), (98, 41372), (99, 41375),

Gene: Filuzino\_63 Start: 40860, Stop: 41222, Start Num: 64

Candidate Starts for Filuzino\_63:

(Start: 64 @40860 has 190 MA's), (98, 41160), (99, 41163), (106, 41205),

Gene: Fingolfin\_30 Start: 20839, Stop: 20519, Start Num: 70

Candidate Starts for Fingolfin\_30:

(5, 21274), (19, 21124), (48, 20929), (Start: 64 @20872 has 190 MA's), (Start: 70 @20839 has 1 MA's), (80, 20743),

Gene: Fireman\_56 Start: 37569, Stop: 38018, Start Num: 63

Candidate Starts for Fireman\_56:

(Start: 63 @37569 has 30 MA's), (72, 37620), (86, 37728), (94, 37833), (95, 37839), (110, 38013),

Gene: Flathead\_66 Start: 42514, Stop: 42876, Start Num: 64

Candidate Starts for Flathead\_66:

(Start: 64 @42514 has 190 MA's), (98, 42814), (99, 42817), (106, 42859),

Gene: Florinda\_76 Start: 43974, Stop: 44336, Start Num: 64

Candidate Starts for Florinda\_76:

(Start: 64 @43974 has 190 MA's), (98, 44274), (99, 44277), (106, 44319),

Gene: FreddyB\_66 Start: 41323, Stop: 41679, Start Num: 64

Candidate Starts for FreddyB\_66:  
(Start: 64 @41323 has 190 MA's), (84, 41497), (98, 41623),

Gene: GAL1\_54 Start: 37553, Stop: 37900, Start Num: 67  
Candidate Starts for GAL1\_54:  
(51, 37502), (Start: 67 @37553 has 29 MA's), (68, 37574), (71, 37592), (72, 37601), (80, 37676), (86, 37727), (90, 37790), (91, 37793), (94, 37823), (99, 37853), (102, 37880), (105, 37892),

Gene: GUmbie\_63 Start: 41676, Stop: 42038, Start Num: 64  
Candidate Starts for GUmbie\_63:  
(Start: 64 @41676 has 190 MA's), (82, 41835), (98, 41976), (99, 41979), (106, 42021),

Gene: Gaia\_85 Start: 50308, Stop: 50631, Start Num: 67  
Candidate Starts for Gaia\_85:  
(Start: 67 @50308 has 29 MA's), (73, 50371), (99, 50596), (100, 50599),

Gene: Galactic\_64 Start: 41833, Stop: 42195, Start Num: 64  
Candidate Starts for Galactic\_64:  
(Start: 64 @41833 has 190 MA's), (82, 41992), (98, 42133), (106, 42178),

Gene: Galaxy\_30 Start: 21976, Stop: 21491, Start Num: 57  
Candidate Starts for Galaxy\_30:  
(Start: 57 @21976 has 1 MA's), (66, 21955), (Start: 70 @21931 has 1 MA's), (80, 21835), (94, 21679), (96, 21670),

Gene: Ganandorf\_53 Start: 35703, Stop: 36155, Start Num: 61  
Candidate Starts for Ganandorf\_53:  
(Start: 61 @35703 has 12 MA's), (72, 35757), (86, 35865), (94, 35970), (95, 35976), (104, 36033), (110, 36150),

Gene: Gandalph\_68 Start: 42720, Stop: 43082, Start Num: 64  
Candidate Starts for Gandalph\_68:  
(35, 42603), (Start: 64 @42720 has 190 MA's), (82, 42879), (98, 43020), (99, 43023), (106, 43065),

Gene: Geralt\_60 Start: 41298, Stop: 41660, Start Num: 64  
Candidate Starts for Geralt\_60:  
(38, 41193), (39, 41199), (Start: 49 @41253 has 1 MA's), (Start: 64 @41298 has 190 MA's), (68, 41331), (98, 41598), (99, 41601), (106, 41643),

Gene: GigiOuiOui\_61 Start: 40822, Stop: 41184, Start Num: 64  
Candidate Starts for GigiOuiOui\_61:  
(Start: 64 @40822 has 190 MA's), (98, 41122), (99, 41125), (106, 41167),

Gene: Gina\_56 Start: 35677, Stop: 36126, Start Num: 63  
Candidate Starts for Gina\_56:  
(51, 35638), (Start: 63 @35677 has 30 MA's), (72, 35728), (86, 35836), (94, 35941), (95, 35947), (107, 36025),

Gene: Girafales\_73 Start: 43765, Stop: 44127, Start Num: 64  
Candidate Starts for Girafales\_73:  
(Start: 64 @43765 has 190 MA's), (98, 44065), (99, 44068), (106, 44110),

Gene: Girr\_63 Start: 41692, Stop: 42054, Start Num: 64

Candidate Starts for Girr\_63:

(Start: 64 @41692 has 190 MA's), (98, 41992), (106, 42037),

Gene: Glorp\_55 Start: 35704, Stop: 36156, Start Num: 61

Candidate Starts for Glorp\_55:

(Start: 61 @35704 has 12 MA's), (72, 35758), (79, 35821), (86, 35866), (94, 35971), (95, 35977), (104, 36034), (110, 36151),

Gene: Glotell\_31 Start: 21028, Stop: 20675, Start Num: 64

Candidate Starts for Glotell\_31:

(5, 21430), (19, 21280), (48, 21085), (Start: 64 @21028 has 190 MA's), (Start: 70 @20995 has 1 MA's), (80, 20899),

Gene: Gonephishing\_112 Start: 63185, Stop: 63505, Start Num: 67

Candidate Starts for Gonephishing\_112:

(Start: 67 @63185 has 29 MA's), (74, 63254), (80, 63296), (91, 63413),

Gene: Gorge\_69 Start: 43618, Stop: 43980, Start Num: 64

Candidate Starts for Gorge\_69:

(Start: 64 @43618 has 190 MA's), (82, 43777), (98, 43918), (99, 43921), (106, 43963),

Gene: Gravel\_31 Start: 21946, Stop: 21581, Start Num: 80

Candidate Starts for Gravel\_31:

(41, 22162), (Start: 62 @22075 has 23 MA's), (80, 21946), (84, 21901), (86, 21895), (94, 21790), (96, 21781), (111, 21634),

Gene: Grimmer\_75 Start: 43862, Stop: 44218, Start Num: 64

Candidate Starts for Grimmer\_75:

(Start: 64 @43862 has 190 MA's), (98, 44162),

Gene: Guppsters\_66 Start: 41977, Stop: 42339, Start Num: 64

Candidate Starts for Guppsters\_66:

(Start: 64 @41977 has 190 MA's), (82, 42136), (98, 42277), (99, 42280), (106, 42322),

Gene: Hades\_66 Start: 42692, Stop: 43054, Start Num: 64

Candidate Starts for Hades\_66:

(Start: 64 @42692 has 190 MA's), (82, 42851), (98, 42992), (99, 42995), (106, 43037),

Gene: Halley\_125 Start: 69492, Stop: 69821, Start Num: 67

Candidate Starts for Halley\_125:

(Start: 67 @69492 has 29 MA's), (74, 69561), (85, 69651), (86, 69654), (91, 69720), (102, 69804),

Gene: HamCheese\_30 Start: 20856, Stop: 20503, Start Num: 64

Candidate Starts for HamCheese\_30:

(5, 21258), (19, 21108), (48, 20913), (Start: 64 @20856 has 190 MA's), (Start: 70 @20823 has 1 MA's), (80, 20727),

Gene: Hamulus\_65 Start: 42334, Stop: 42690, Start Num: 64

Candidate Starts for Hamulus\_65:

(Start: 64 @42334 has 190 MA's), (98, 42634), (99, 42637),

Gene: HannahPhantana\_32 Start: 21514, Stop: 21161, Start Num: 62

Candidate Starts for HannahPhantana\_32:

(31, 21640), (41, 21601), (Start: 62 @21514 has 23 MA's), (80, 21385), (84, 21340), (96, 21220),

Gene: Hegedechwinu\_65 Start: 41510, Stop: 41872, Start Num: 64

Candidate Starts for Hegedechwinu\_65:

(35, 41393), (Start: 64 @41510 has 190 MA's), (82, 41669), (98, 41810), (99, 41813), (106, 41855),

Gene: Hermeonysus\_53 Start: 35602, Stop: 36051, Start Num: 63

Candidate Starts for Hermeonysus\_53:

(Start: 63 @35602 has 30 MA's), (86, 35761), (94, 35866), (104, 35929), (110, 36046),

Gene: Hlubikazi\_61 Start: 39912, Stop: 40274, Start Num: 64

Candidate Starts for Hlubikazi\_61:

(Start: 64 @39912 has 190 MA's), (98, 40212), (99, 40215), (106, 40257),

Gene: Honeyfin\_55 Start: 35891, Stop: 36343, Start Num: 61

Candidate Starts for Honeyfin\_55:

(Start: 61 @35891 has 12 MA's), (72, 35945), (79, 36008), (86, 36053), (94, 36158), (95, 36164), (104, 36221), (110, 36338),

Gene: Hughesyang\_122 Start: 68948, Stop: 69280, Start Num: 67

Candidate Starts for Hughesyang\_122:

(Start: 67 @68948 has 29 MA's), (74, 69017), (91, 69176),

Gene: lbOuu\_65 Start: 43348, Stop: 43710, Start Num: 64

Candidate Starts for lbOuu\_65:

(38, 43243), (39, 43249), (Start: 49 @43303 has 1 MA's), (Start: 64 @43348 has 190 MA's), (68, 43381), (98, 43648), (99, 43651), (106, 43693),

Gene: lbhubesi\_65 Start: 41957, Stop: 42313, Start Num: 64

Candidate Starts for lbhubesi\_65:

(Start: 64 @41957 has 190 MA's), (98, 42257), (99, 42260),

Gene: IrishSherpFalk\_66 Start: 43547, Stop: 43909, Start Num: 64

Candidate Starts for IrishSherpFalk\_66:

(Start: 64 @43547 has 190 MA's), (98, 43847), (99, 43850), (106, 43892),

Gene: Jabbawokkie\_80 Start: 44082, Stop: 44423, Start Num: 64

Candidate Starts for Jabbawokkie\_80:

(54, 44067), (Start: 64 @44082 has 190 MA's), (98, 44382), (99, 44385),

Gene: JalFarm20\_78 Start: 46016, Stop: 46372, Start Num: 64

Candidate Starts for JalFarm20\_78:

(Start: 64 @46016 has 190 MA's), (98, 46316), (99, 46319),

Gene: James\_69 Start: 43743, Stop: 44105, Start Num: 64

Candidate Starts for James\_69:

(Start: 64 @43743 has 190 MA's), (82, 43902), (98, 44043), (99, 44046), (106, 44088),

Gene: Jamun\_28 Start: 21237, Stop: 20692, Start Num: 62

Candidate Starts for Jamun\_28:

(41, 21321), (Start: 58 @21240 has 1 MA's), (Start: 62 @21237 has 23 MA's), (Start: 70 @21204 has 1 MA's), (80, 21108), (84, 21063), (86, 21057), (96, 20943), (111, 20766),

Gene: Jant\_69 Start: 43594, Stop: 43950, Start Num: 64  
Candidate Starts for Jant\_69:  
(Start: 64 @43594 has 190 MA's), (98, 43894), (99, 43897),

Gene: Jefe\_54 Start: 35660, Stop: 36109, Start Num: 63  
Candidate Starts for Jefe\_54:  
(15, 35351), (16, 35354), (29, 35495), (42, 35567), (Start: 63 @35660 has 30 MA's), (86, 35819), (94, 35924), (95, 35930), (104, 35987), (110, 36104),

Gene: Jerole\_32 Start: 21637, Stop: 21284, Start Num: 62  
Candidate Starts for Jerole\_32:  
(31, 21763), (41, 21724), (Start: 62 @21637 has 23 MA's), (80, 21508), (84, 21463), (96, 21343),

Gene: Jollipop\_54 Start: 35999, Stop: 36448, Start Num: 63  
Candidate Starts for Jollipop\_54:  
(4, 35573), (15, 35690), (16, 35693), (29, 35834), (42, 35906), (Start: 63 @35999 has 30 MA's), (79, 36113), (86, 36158), (94, 36263), (95, 36269), (104, 36326), (110, 36443),

Gene: Juice456\_66 Start: 43972, Stop: 44328, Start Num: 64  
Candidate Starts for Juice456\_66:  
(Start: 64 @43972 has 190 MA's), (98, 44272), (99, 44275),

Gene: Juniper1\_65 Start: 42735, Stop: 43091, Start Num: 60  
Candidate Starts for Juniper1\_65:  
(53, 42720), (Start: 60 @42735 has 1 MA's), (87, 42939), (98, 43035), (99, 43038),

Gene: Juno112\_29 Start: 20872, Stop: 20519, Start Num: 64  
Candidate Starts for Juno112\_29:  
(5, 21274), (19, 21124), (48, 20929), (Start: 64 @20872 has 190 MA's), (Start: 70 @20839 has 1 MA's), (80, 20743),

Gene: KHumphrey\_30 Start: 20837, Stop: 20517, Start Num: 70  
Candidate Starts for KHumphrey\_30:  
(1, 21422), (5, 21272), (19, 21122), (48, 20927), (Start: 64 @20870 has 190 MA's), (Start: 70 @20837 has 1 MA's), (80, 20741),

Gene: KaiHaiDragon\_54 Start: 35596, Stop: 36045, Start Num: 63  
Candidate Starts for KaiHaiDragon\_54:  
(Start: 63 @35596 has 30 MA's), (92, 35845), (94, 35860), (95, 35866), (104, 35923), (110, 36040),

Gene: Kalah2\_114 Start: 67637, Stop: 67966, Start Num: 67  
Candidate Starts for Kalah2\_114:  
(Start: 67 @67637 has 29 MA's), (74, 67706), (91, 67865), (102, 67949),

Gene: Karhdo\_64 Start: 43305, Stop: 43667, Start Num: 64  
Candidate Starts for Karhdo\_64:  
(Start: 64 @43305 has 190 MA's), (82, 43464), (98, 43605), (106, 43650),

Gene: KendraB23\_32 Start: 22134, Stop: 21769, Start Num: 80  
Candidate Starts for KendraB23\_32:  
(41, 22350), (Start: 62 @22263 has 23 MA's), (80, 22134), (84, 22089), (86, 22083), (94, 21978), (96, 21969), (111, 21822),

Gene: Kenuha5\_63 Start: 41295, Stop: 41651, Start Num: 64  
Candidate Starts for Kenuha5\_63:  
(Start: 64 @41295 has 190 MA's), (82, 41454), (98, 41595), (99, 41598), (106, 41634),

Gene: Kepler\_32 Start: 21801, Stop: 21448, Start Num: 62  
Candidate Starts for Kepler\_32:  
(31, 21927), (41, 21888), (Start: 62 @21801 has 23 MA's), (80, 21672), (96, 21507),

Gene: Kersh\_67 Start: 44741, Stop: 45097, Start Num: 64  
Candidate Starts for Kersh\_67:  
(Start: 64 @44741 has 190 MA's), (82, 44900), (98, 45041), (99, 45044),

Gene: Kimberlium\_70 Start: 44253, Stop: 44594, Start Num: 64  
Candidate Starts for Kimberlium\_70:  
(Start: 64 @44253 has 190 MA's), (98, 44553), (99, 44556),

Gene: Klein\_119 Start: 65994, Stop: 66323, Start Num: 67  
Candidate Starts for Klein\_119:  
(Start: 67 @65994 has 29 MA's), (74, 66063), (85, 66153), (86, 66156), (91, 66222), (102, 66306),

Gene: Koella\_59 Start: 38373, Stop: 38735, Start Num: 64  
Candidate Starts for Koella\_59:  
(Start: 64 @38373 has 190 MA's), (84, 38547), (98, 38673), (106, 38718),

Gene: Kowalski\_53 Start: 35709, Stop: 36158, Start Num: 63  
Candidate Starts for Kowalski\_53:  
(15, 35400), (16, 35403), (29, 35544), (42, 35616), (Start: 63 @35709 has 30 MA's), (94, 35973), (95, 35979), (104, 36036), (110, 36153),

Gene: KristaRAM\_68 Start: 44341, Stop: 44697, Start Num: 64  
Candidate Starts for KristaRAM\_68:  
(Start: 64 @44341 has 190 MA's), (98, 44641), (99, 44644),

Gene: Kuleana\_32 Start: 21579, Stop: 21160, Start Num: 49  
Candidate Starts for Kuleana\_32:  
(25, 21714), (Start: 49 @21579 has 1 MA's), (Start: 63 @21528 has 30 MA's), (Start: 70 @21480 has 1 MA's), (78, 21408), (80, 21384), (96, 21219),

Gene: Laphuphu24k\_29 Start: 20823, Stop: 20503, Start Num: 70  
Candidate Starts for Laphuphu24k\_29:  
(5, 21258), (19, 21108), (48, 20913), (Start: 64 @20856 has 190 MA's), (Start: 70 @20823 has 1 MA's), (80, 20727),

Gene: LastJedi\_59 Start: 39690, Stop: 40052, Start Num: 64  
Candidate Starts for LastJedi\_59:  
(35, 39573), (Start: 64 @39690 has 190 MA's), (82, 39849), (98, 39990), (106, 40035),

Gene: Leona\_29 Start: 20943, Stop: 20590, Start Num: 64  
Candidate Starts for Leona\_29:  
(19, 21195), (48, 21000), (Start: 64 @20943 has 190 MA's), (Start: 70 @20910 has 1 MA's), (80, 20814), (86, 20763),

Gene: Leozinho\_64 Start: 41151, Stop: 41507, Start Num: 64

Candidate Starts for Leozinho\_64:

(Start: 64 @41151 has 190 MA's), (82, 41310), (98, 41451), (99, 41454),

Gene: LilMoolah\_64 Start: 42220, Stop: 42582, Start Num: 64

Candidate Starts for LilMoolah\_64:

(35, 42103), (Start: 64 @42220 has 190 MA's), (82, 42379), (98, 42520), (106, 42565),

Gene: LittleE\_122 Start: 67384, Stop: 67704, Start Num: 67

Candidate Starts for LittleE\_122:

(Start: 67 @67384 has 29 MA's), (74, 67453), (80, 67495), (91, 67612),

Gene: LittleFortune\_55 Start: 35965, Stop: 36414, Start Num: 63

Candidate Starts for LittleFortune\_55:

(4, 35539), (15, 35656), (16, 35659), (29, 35800), (42, 35872), (Start: 63 @35965 has 30 MA's), (94, 36229), (95, 36235), (104, 36292), (110, 36409),

Gene: LittleTokyo\_32 Start: 21633, Stop: 21280, Start Num: 67

Candidate Starts for LittleTokyo\_32:

(Start: 67 @21633 has 29 MA's), (78, 21528), (80, 21504),

Gene: Lizziana\_71 Start: 43224, Stop: 43586, Start Num: 64

Candidate Starts for Lizziana\_71:

(Start: 64 @43224 has 190 MA's), (82, 43383), (98, 43524), (99, 43527), (106, 43569),

Gene: Llij\_61 Start: 40711, Stop: 41073, Start Num: 64

Candidate Starts for Llij\_61:

(Start: 64 @40711 has 190 MA's), (82, 40870), (98, 41011), (99, 41014), (106, 41056),

Gene: Lorde\_65 Start: 39998, Stop: 40360, Start Num: 64

Candidate Starts for Lorde\_65:

(Start: 64 @39998 has 190 MA's), (82, 40157), (98, 40298), (99, 40301), (106, 40343),

Gene: Lucretia\_54 Start: 35620, Stop: 36072, Start Num: 61

Candidate Starts for Lucretia\_54:

(Start: 61 @35620 has 12 MA's), (72, 35674), (79, 35737), (86, 35782), (93, 35884), (94, 35887), (95, 35893), (104, 35950), (110, 36067),

Gene: LunaBlu\_67 Start: 42492, Stop: 42854, Start Num: 64

Candidate Starts for LunaBlu\_67:

(Start: 64 @42492 has 190 MA's), (82, 42651), (98, 42792), (106, 42837),

Gene: LunaStella\_65 Start: 42568, Stop: 42930, Start Num: 64

Candidate Starts for LunaStella\_65:

(Start: 64 @42568 has 190 MA's), (98, 42868), (99, 42871), (106, 42913),

Gene: Lunar\_32 Start: 21502, Stop: 21149, Start Num: 62

Candidate Starts for Lunar\_32:

(31, 21628), (41, 21589), (Start: 62 @21502 has 23 MA's), (80, 21373), (84, 21328), (96, 21208),

Gene: MadMen\_65 Start: 42619, Stop: 42975, Start Num: 64

Candidate Starts for MadMen\_65:

(35, 42502), (Start: 64 @42619 has 190 MA's), (82, 42778), (98, 42919), (99, 42922),

Gene: Madiba\_66 Start: 41725, Stop: 42087, Start Num: 64  
Candidate Starts for Madiba\_66:  
(Start: 64 @41725 has 190 MA's), (82, 41884), (98, 42025), (106, 42070),

Gene: Mahavrat\_62 Start: 41431, Stop: 41787, Start Num: 64  
Candidate Starts for Mahavrat\_62:  
(Start: 64 @41431 has 190 MA's), (98, 41731),

Gene: Mandlovu\_61 Start: 39854, Stop: 40216, Start Num: 64  
Candidate Starts for Mandlovu\_61:  
(Start: 64 @39854 has 190 MA's), (98, 40154), (99, 40157), (106, 40199),

Gene: Mantra\_62 Start: 41207, Stop: 41563, Start Num: 64  
Candidate Starts for Mantra\_62:  
(54, 41192), (Start: 64 @41207 has 190 MA's), (98, 41507), (99, 41510),

Gene: Maravista\_67 Start: 44362, Stop: 44724, Start Num: 64  
Candidate Starts for Maravista\_67:  
(Start: 64 @44362 has 190 MA's), (82, 44521), (84, 44536), (98, 44662), (106, 44707),

Gene: Margaery\_51 Start: 36177, Stop: 36518, Start Num: 59  
Candidate Starts for Margaery\_51:  
(11, 35859), (12, 35862), (13, 35868), (17, 35898), (20, 35925), (21, 35928), (46, 36120), (53, 36165),  
(56, 36168), (Start: 59 @36177 has 1 MA's), (68, 36210), (79, 36300), (81, 36318), (88, 36393), (89,  
36417), (91, 36423), (100, 36483),

Gene: Martik\_65 Start: 42396, Stop: 42752, Start Num: 64  
Candidate Starts for Martik\_65:  
(35, 42279), (Start: 64 @42396 has 190 MA's), (82, 42555), (98, 42696), (99, 42699),

Gene: Mattes\_69 Start: 43743, Stop: 44105, Start Num: 64  
Candidate Starts for Mattes\_69:  
(Start: 64 @43743 has 190 MA's), (82, 43902), (98, 44043), (99, 44046), (106, 44088),

Gene: Megan\_52 Start: 39265, Stop: 39606, Start Num: 64  
Candidate Starts for Megan\_52:  
(8, 38917), (17, 38971), (18, 38992), (21, 39001), (27, 39076), (28, 39088), (30, 39103), (34, 39136),  
(40, 39160), (43, 39175), (50, 39217), (Start: 64 @39265 has 190 MA's), (Start: 70 @39298 has 1  
MA's), (89, 39493), (91, 39499), (94, 39526), (95, 39532), (97, 39550),

Gene: Melissauren88\_63 Start: 41372, Stop: 41734, Start Num: 64  
Candidate Starts for Melissauren88\_63:  
(Start: 64 @41372 has 190 MA's), (98, 41672), (99, 41675), (106, 41717),

Gene: Melons\_32 Start: 21502, Stop: 21149, Start Num: 62  
Candidate Starts for Melons\_32:  
(31, 21628), (41, 21589), (Start: 62 @21502 has 23 MA's), (80, 21373), (84, 21328), (96, 21208),

Gene: Merry\_ Start: 37459, Stop: 37911, Start Num: 61  
Candidate Starts for Merry\_  
(Start: 61 @37459 has 12 MA's), (87, 37657), (91, 37699), (110, 37906),

Gene: Metamorphoo\_56 Start: 36831, Stop: 37280, Start Num: 63

Candidate Starts for Metamorphoo\_56:  
(Start: 63 @36831 has 30 MA's), (72, 36882), (86, 36990), (94, 37095), (95, 37101), (110, 37275),

Gene: MilleniumForce\_68 Start: 44060, Stop: 44416, Start Num: 64  
Candidate Starts for MilleniumForce\_68:  
(Start: 64 @44060 has 190 MA's), (98, 44360), (99, 44363),

Gene: Minerva\_120 Start: 67549, Stop: 67881, Start Num: 67  
Candidate Starts for Minerva\_120:  
(Start: 67 @67549 has 29 MA's), (74, 67618), (91, 67777),

Gene: MinionDave\_64 Start: 42746, Stop: 43108, Start Num: 64  
Candidate Starts for MinionDave\_64:  
(35, 42629), (Start: 64 @42746 has 190 MA's), (82, 42905), (98, 43046), (106, 43091),

Gene: Minnie\_68 Start: 43966, Stop: 44328, Start Num: 64  
Candidate Starts for Minnie\_68:  
(35, 43849), (Start: 64 @43966 has 190 MA's), (82, 44125), (98, 44266), (106, 44311),

Gene: MisterCuddles\_63 Start: 41692, Stop: 42054, Start Num: 64  
Candidate Starts for MisterCuddles\_63:  
(Start: 64 @41692 has 190 MA's), (98, 41992), (106, 42037),

Gene: Moonbeam\_64 Start: 41974, Stop: 42336, Start Num: 64  
Candidate Starts for Moonbeam\_64:  
(Start: 64 @41974 has 190 MA's), (69, 42016), (82, 42133), (98, 42274), (106, 42319),

Gene: Mova\_69 Start: 42229, Stop: 42585, Start Num: 64  
Candidate Starts for Mova\_69:  
(Start: 64 @42229 has 190 MA's), (82, 42388), (98, 42529), (99, 42532), (106, 42568),

Gene: Mozy\_75 Start: 44841, Stop: 45203, Start Num: 64  
Candidate Starts for Mozy\_75:  
(55, 44826), (Start: 64 @44841 has 190 MA's), (82, 45000), (98, 45141), (106, 45186),

Gene: Ms6\_62 Start: 37737, Stop: 38099, Start Num: 64  
Candidate Starts for Ms6\_62:  
(Start: 64 @37737 has 190 MA's), (98, 38037), (99, 38040), (106, 38082),

Gene: MulchExplorer\_73 Start: 44252, Stop: 44593, Start Num: 64  
Candidate Starts for MulchExplorer\_73:  
(Start: 64 @44252 has 190 MA's), (98, 44552), (99, 44555),

Gene: Mutaforma13\_71 Start: 45673, Stop: 46035, Start Num: 64  
Candidate Starts for Mutaforma13\_71:  
(Start: 64 @45673 has 190 MA's), (98, 45973), (106, 46018),

Gene: Nebkiss\_84 Start: 48920, Stop: 49243, Start Num: 67  
Candidate Starts for Nebkiss\_84:  
(Start: 67 @48920 has 29 MA's), (73, 48983), (99, 49208), (100, 49211),

Gene: Niblet\_27 Start: 21668, Stop: 21147, Start Num: 62  
Candidate Starts for Niblet\_27:

(31, 21791), (41, 21752), (Start: 62 @21668 has 23 MA's), (80, 21539), (84, 21494), (86, 21488), (94, 21383), (96, 21374), (111, 21227),

Gene: Nicole72\_53 Start: 39892, Stop: 40239, Start Num: 64

Candidate Starts for Nicole72\_53:

(47, 39826), (50, 39844), (Start: 64 @39892 has 190 MA's), (87, 40084), (94, 40153), (95, 40159),

Gene: Nimbo\_59 Start: 41301, Stop: 41663, Start Num: 64

Candidate Starts for Nimbo\_59:

(38, 41196), (39, 41202), (Start: 49 @41256 has 1 MA's), (Start: 64 @41301 has 190 MA's), (68, 41334), (98, 41601), (99, 41604), (106, 41646),

Gene: Nitzel\_62 Start: 41489, Stop: 41851, Start Num: 64

Candidate Starts for Nitzel\_62:

(Start: 64 @41489 has 190 MA's), (98, 41789), (99, 41792), (106, 41834),

Gene: Nivrat\_62 Start: 42093, Stop: 42455, Start Num: 64

Candidate Starts for Nivrat\_62:

(35, 41976), (Start: 64 @42093 has 190 MA's), (82, 42252), (98, 42393), (106, 42438),

Gene: NoodlelyBoi\_55 Start: 36387, Stop: 36836, Start Num: 63

Candidate Starts for NoodlelyBoi\_55:

(14, 36069), (23, 36156), (24, 36174), (36, 36273), (48, 36327), (Start: 63 @36387 has 30 MA's), (86, 36546), (87, 36582), (92, 36636), (94, 36651), (95, 36657), (104, 36714), (110, 36831),

Gene: NormanBulbieJr\_65 Start: 42386, Stop: 42748, Start Num: 64

Candidate Starts for NormanBulbieJr\_65:

(Start: 64 @42386 has 190 MA's), (84, 42560), (98, 42686), (106, 42731),

Gene: Ogopogo\_71 Start: 42797, Stop: 43153, Start Num: 64

Candidate Starts for Ogopogo\_71:

(37, 42686), (Start: 64 @42797 has 190 MA's), (98, 43097), (99, 43100),

Gene: OldBen\_63 Start: 42694, Stop: 43056, Start Num: 64

Candidate Starts for OldBen\_63:

(38, 42589), (39, 42595), (Start: 49 @42649 has 1 MA's), (Start: 64 @42694 has 190 MA's), (68, 42727), (98, 42994), (99, 42997), (106, 43039),

Gene: OlympiaSaint\_67 Start: 42685, Stop: 43047, Start Num: 64

Candidate Starts for OlympiaSaint\_67:

(Start: 64 @42685 has 190 MA's), (82, 42844), (98, 42985), (99, 42988), (106, 43030),

Gene: Onika\_53 Start: 35684, Stop: 36133, Start Num: 63

Candidate Starts for Onika\_53:

(Start: 63 @35684 has 30 MA's), (86, 35843), (94, 35948), (104, 36011), (110, 36128),

Gene: Oppalora\_29 Start: 20837, Stop: 20517, Start Num: 70

Candidate Starts for Oppalora\_29:

(5, 21272), (19, 21122), (48, 20927), (Start: 64 @20870 has 190 MA's), (Start: 70 @20837 has 1 MA's), (80, 20741),

Gene: Optimus\_113 Start: 65945, Stop: 66277, Start Num: 67

Candidate Starts for Optimus\_113:

(Start: 67 @65945 has 29 MA's), (74, 66014), (85, 66104), (86, 66107), (91, 66173),

Gene: Orcanus\_29 Start: 21876, Stop: 21382, Start Num: 62

Candidate Starts for Orcanus\_29:

(31, 22002), (41, 21963), (Start: 62 @21876 has 23 MA's), (80, 21747), (84, 21702), (86, 21696), (94, 21591), (96, 21582), (111, 21435),

Gene: OtsoOtso\_32 Start: 21366, Stop: 21013, Start Num: 62

Candidate Starts for OtsoOtso\_32:

(31, 21492), (41, 21453), (Start: 62 @21366 has 23 MA's), (80, 21237), (84, 21192), (96, 21072),

Gene: Ovechkin\_65 Start: 42688, Stop: 43050, Start Num: 64

Candidate Starts for Ovechkin\_65:

(Start: 64 @42688 has 190 MA's), (98, 42988), (99, 42991), (106, 43033),

Gene: OwlsT2W\_65 Start: 42020, Stop: 42376, Start Num: 64

Candidate Starts for OwlsT2W\_65:

(Start: 64 @42020 has 190 MA's), (82, 42179), (98, 42320),

Gene: PMC\_62 Start: 42410, Stop: 42766, Start Num: 64

Candidate Starts for PMC\_62:

(Start: 64 @42410 has 190 MA's), (98, 42710), (99, 42713),

Gene: Pacc40\_59 Start: 40742, Stop: 41104, Start Num: 64

Candidate Starts for Pacc40\_59:

(35, 40625), (Start: 64 @40742 has 190 MA's), (82, 40901), (98, 41042), (106, 41087),

Gene: Paschalis\_53 Start: 35691, Stop: 36140, Start Num: 63

Candidate Starts for Paschalis\_53:

(Start: 63 @35691 has 30 MA's), (77, 35790), (86, 35850), (94, 35955), (95, 35961), (104, 36018), (110, 36135),

Gene: Pelletreau\_31 Start: 21946, Stop: 21581, Start Num: 80

Candidate Starts for Pelletreau\_31:

(41, 22162), (Start: 62 @22075 has 23 MA's), (80, 21946), (84, 21901), (86, 21895), (94, 21790), (96, 21781), (111, 21634),

Gene: Phabuloso\_75 Start: 43819, Stop: 44166, Start Num: 67

Candidate Starts for Phabuloso\_75:

(39, 43705), (Start: 58 @43795 has 1 MA's), (Start: 67 @43819 has 29 MA's), (68, 43840), (71, 43858), (72, 43867), (80, 43942), (83, 43975), (86, 43993), (90, 44056), (91, 44059), (94, 44089), (99, 44119), (102, 44146), (105, 44158),

Gene: Phalconet\_63 Start: 40623, Stop: 40985, Start Num: 64

Candidate Starts for Phalconet\_63:

(Start: 64 @40623 has 190 MA's), (98, 40923), (99, 40926), (106, 40968),

Gene: Phanphagia\_61 Start: 42234, Stop: 42596, Start Num: 64

Candidate Starts for Phanphagia\_61:

(Start: 64 @42234 has 190 MA's), (98, 42534), (99, 42537), (106, 42579),

Gene: Phatniss\_63 Start: 41806, Stop: 42168, Start Num: 64

Candidate Starts for Phatniss\_63:

(Start: 64 @41806 has 190 MA's), (82, 41965), (98, 42106), (99, 42109), (106, 42151),

Gene: PhedwardCullen\_52 Start: 35442, Stop: 35891, Start Num: 63

Candidate Starts for PhedwardCullen\_52:

(Start: 63 @35442 has 30 MA's), (86, 35601), (94, 35706), (95, 35712), (104, 35769), (110, 35886),

Gene: PhesterPhotato\_65 Start: 41443, Stop: 41799, Start Num: 64

Candidate Starts for PhesterPhotato\_65:

(Start: 64 @41443 has 190 MA's), (82, 41602), (98, 41743), (99, 41746),

Gene: Philus\_69 Start: 43883, Stop: 44239, Start Num: 64

Candidate Starts for Philus\_69:

(35, 43766), (Start: 64 @43883 has 190 MA's), (84, 44057), (98, 44183), (99, 44186), (106, 44222),

Gene: PhirstandPhine\_34 Start: 21645, Stop: 21292, Start Num: 62

Candidate Starts for PhirstandPhine\_34:

(31, 21771), (41, 21732), (Start: 62 @21645 has 23 MA's), (80, 21516), (84, 21471), (96, 21351),

Gene: PhlipPhlop\_65 Start: 44108, Stop: 44470, Start Num: 64

Candidate Starts for PhlipPhlop\_65:

(35, 43991), (Start: 64 @44108 has 190 MA's), (69, 44150), (82, 44267), (98, 44408), (99, 44411), (106, 44453),

Gene: PhluffyCoco\_30 Start: 20856, Stop: 20503, Start Num: 64

Candidate Starts for PhluffyCoco\_30:

(5, 21258), (19, 21108), (48, 20913), (Start: 64 @20856 has 190 MA's), (Start: 70 @20823 has 1 MA's), (80, 20727),

Gene: Phorgeous\_53 Start: 35522, Stop: 35974, Start Num: 61

Candidate Starts for Phorgeous\_53:

(Start: 61 @35522 has 12 MA's), (72, 35576), (86, 35684), (94, 35789), (95, 35795), (104, 35852), (110, 35969),

Gene: Phrancesco\_54 Start: 35812, Stop: 36264, Start Num: 61

Candidate Starts for Phrancesco\_54:

(Start: 61 @35812 has 12 MA's), (72, 35866), (86, 35974), (94, 36079), (104, 36142), (110, 36259),

Gene: PierreOrion\_54 Start: 35858, Stop: 36307, Start Num: 63

Candidate Starts for PierreOrion\_54:

(4, 35432), (15, 35549), (16, 35552), (29, 35693), (42, 35765), (Start: 63 @35858 has 30 MA's), (79, 35972), (86, 36017), (94, 36122), (95, 36128), (104, 36185), (110, 36302),

Gene: Pineda\_33 Start: 21654, Stop: 21301, Start Num: 62

Candidate Starts for Pineda\_33:

(31, 21780), (41, 21741), (Start: 62 @21654 has 23 MA's), (80, 21525), (84, 21480), (96, 21360),

Gene: PiperSansNom\_54 Start: 35998, Stop: 36447, Start Num: 63

Candidate Starts for PiperSansNom\_54:

(Start: 63 @35998 has 30 MA's), (86, 36157), (94, 36262), (104, 36325), (110, 36442),

Gene: Piperis\_54 Start: 35645, Stop: 36097, Start Num: 61

Candidate Starts for Piperis\_54:

(Start: 61 @35645 has 12 MA's), (72, 35699), (86, 35807), (94, 35912), (95, 35918), (104, 35975), (110, 36092),

Gene: Pippy\_64 Start: 41724, Stop: 42086, Start Num: 64

Candidate Starts for Pippy\_64:

(Start: 64 @41724 has 190 MA's), (82, 41883), (84, 41898), (98, 42024), (106, 42069),

Gene: Plumbus\_68 Start: 42573, Stop: 42935, Start Num: 64

Candidate Starts for Plumbus\_68:

(Start: 64 @42573 has 190 MA's), (98, 42873), (99, 42876), (106, 42918),

Gene: Polka\_31 Start: 21366, Stop: 21013, Start Num: 62

Candidate Starts for Polka\_31:

(31, 21492), (41, 21453), (Start: 62 @21366 has 23 MA's), (80, 21237), (84, 21192), (96, 21072),

Gene: Pollywog\_66 Start: 43003, Stop: 43359, Start Num: 64

Candidate Starts for Pollywog\_66:

(Start: 64 @43003 has 190 MA's), (82, 43162), (98, 43303), (99, 43306),

Gene: PopTart\_59 Start: 40248, Stop: 40610, Start Num: 64

Candidate Starts for PopTart\_59:

(Start: 64 @40248 has 190 MA's), (98, 40548), (99, 40551), (106, 40593),

Gene: Pound\_112 Start: 66568, Stop: 66897, Start Num: 67

Candidate Starts for Pound\_112:

(Start: 67 @66568 has 29 MA's), (74, 66637), (91, 66796), (102, 66880),

Gene: Priscilla\_65 Start: 42485, Stop: 42847, Start Num: 64

Candidate Starts for Priscilla\_65:

(Start: 64 @42485 has 190 MA's), (84, 42659), (98, 42785), (106, 42830),

Gene: Pulchra\_55 Start: 36042, Stop: 36494, Start Num: 61

Candidate Starts for Pulchra\_55:

(Start: 61 @36042 has 12 MA's), (72, 36096), (79, 36159), (86, 36204), (94, 36309), (104, 36372), (110, 36489),

Gene: Quhwah\_57 Start: 36306, Stop: 36755, Start Num: 63

Candidate Starts for Quhwah\_57:

(Start: 63 @36306 has 30 MA's), (86, 36465), (94, 36570), (95, 36576), (104, 36633), (110, 36750),

Gene: QuickMath\_69 Start: 44476, Stop: 44817, Start Num: 64

Candidate Starts for QuickMath\_69:

(Start: 64 @44476 has 190 MA's), (98, 44776), (99, 44779),

Gene: Quico\_73 Start: 43794, Stop: 44156, Start Num: 64

Candidate Starts for Quico\_73:

(Start: 64 @43794 has 190 MA's), (98, 44094), (99, 44097), (106, 44139),

Gene: Radiance\_64 Start: 41901, Stop: 42263, Start Num: 64

Candidate Starts for Radiance\_64:

(Start: 64 @41901 has 190 MA's), (82, 42060), (98, 42201), (99, 42204), (106, 42246),

Gene: Ramiel05\_53 Start: 35709, Stop: 36158, Start Num: 63

Candidate Starts for Ramiel05\_53:

(15, 35400), (16, 35403), (29, 35544), (42, 35616), (Start: 63 @35709 has 30 MA's), (94, 35973), (95, 35979), (104, 36036), (110, 36153),

Gene: Ramsey\_64 Start: 42214, Stop: 42576, Start Num: 64

Candidate Starts for Ramsey\_64:

(Start: 64 @42214 has 190 MA's), (82, 42373), (98, 42514), (106, 42559),

Gene: Rattail\_30 Start: 20919, Stop: 20599, Start Num: 70

Candidate Starts for Rattail\_30:

(5, 21354), (19, 21204), (48, 21009), (Start: 64 @20952 has 190 MA's), (Start: 70 @20919 has 1 MA's), (80, 20823),

Gene: RedFox\_30 Start: 20869, Stop: 20516, Start Num: 64

Candidate Starts for RedFox\_30:

(5, 21271), (19, 21121), (48, 20926), (Start: 64 @20869 has 190 MA's), (Start: 70 @20836 has 1 MA's), (80, 20740),

Gene: Redno2\_116 Start: 66004, Stop: 66333, Start Num: 67

Candidate Starts for Redno2\_116:

(Start: 67 @66004 has 29 MA's), (74, 66073), (85, 66163), (86, 66166), (91, 66232), (102, 66316),

Gene: Renaud18\_75 Start: 44207, Stop: 44563, Start Num: 64

Candidate Starts for Renaud18\_75:

(Start: 64 @44207 has 190 MA's), (82, 44366), (98, 44507),

Gene: Renna12\_29 Start: 20890, Stop: 20534, Start Num: 64

Candidate Starts for Renna12\_29:

(Start: 64 @20890 has 190 MA's), (Start: 70 @20857 has 1 MA's), (80, 20761), (96, 20596),

Gene: Rialto\_70 Start: 44435, Stop: 44797, Start Num: 64

Candidate Starts for Rialto\_70:

(Start: 64 @44435 has 190 MA's), (98, 44735), (99, 44738), (106, 44780),

Gene: Rita\_66 Start: 40513, Stop: 40875, Start Num: 64

Candidate Starts for Rita\_66:

(Start: 64 @40513 has 190 MA's), (82, 40672), (98, 40813), (106, 40858),

Gene: RobsFeet\_57 Start: 37130, Stop: 37579, Start Num: 63

Candidate Starts for RobsFeet\_57:

(Start: 63 @37130 has 30 MA's), (72, 37181), (86, 37289), (94, 37394), (95, 37400), (110, 37574),

Gene: Rockne\_66 Start: 42422, Stop: 42778, Start Num: 64

Candidate Starts for Rockne\_66:

(Start: 64 @42422 has 190 MA's), (98, 42722), (99, 42725),

Gene: Rockwell\_53 Start: 35709, Stop: 36158, Start Num: 63

Candidate Starts for Rockwell\_53:

(Start: 63 @35709 has 30 MA's), (86, 35868), (94, 35973), (104, 36036), (110, 36153),

Gene: RockyHorror\_66 Start: 41564, Stop: 41926, Start Num: 64

Candidate Starts for RockyHorror\_66:

(Start: 64 @41564 has 190 MA's), (98, 41864), (106, 41909),

Gene: Royals2015\_68 Start: 42421, Stop: 42777, Start Num: 64  
Candidate Starts for Royals2015\_68:  
(Start: 64 @42421 has 190 MA's), (69, 42463), (82, 42580), (98, 42721),

Gene: Ruby\_61 Start: 41693, Stop: 42055, Start Num: 64  
Candidate Starts for Ruby\_61:  
(Start: 64 @41693 has 190 MA's), (98, 41993), (106, 42038),

Gene: Ruchi\_29 Start: 22284, Stop: 21793, Start Num: 62  
Candidate Starts for Ruchi\_29:  
(31, 22410), (Start: 62 @22284 has 23 MA's), (Start: 70 @22251 has 1 MA's), (78, 22179), (80, 22155),  
(84, 22110), (96, 21990),

Gene: SG4\_62 Start: 41300, Stop: 41665, Start Num: 64  
Candidate Starts for SG4\_62:  
(Start: 64 @41300 has 190 MA's), (98, 41600),

Gene: Saal\_67 Start: 43437, Stop: 43799, Start Num: 64  
Candidate Starts for Saal\_67:  
(Start: 64 @43437 has 190 MA's), (82, 43596), (98, 43737), (99, 43740), (106, 43782),

Gene: Sandalphon\_66 Start: 42944, Stop: 43306, Start Num: 64  
Candidate Starts for Sandalphon\_66:  
(35, 42827), (Start: 64 @42944 has 190 MA's), (82, 43103), (98, 43244), (106, 43289),

Gene: SassyB\_59 Start: 40248, Stop: 40610, Start Num: 64  
Candidate Starts for SassyB\_59:  
(Start: 64 @40248 has 190 MA's), (98, 40548), (99, 40551), (106, 40593),

Gene: Savannah\_53 Start: 35736, Stop: 36185, Start Num: 63  
Candidate Starts for Savannah\_53:  
(Start: 63 @35736 has 30 MA's), (86, 35895), (94, 36000), (95, 36006), (104, 36063), (110, 36180),

Gene: Scumberland\_55 Start: 35931, Stop: 36380, Start Num: 63  
Candidate Starts for Scumberland\_55:  
(4, 35505), (15, 35622), (16, 35625), (29, 35766), (42, 35838), (Start: 63 @35931 has 30 MA's), (94,  
36195), (95, 36201), (104, 36258), (110, 36375),

Gene: Seagreen\_64 Start: 41603, Stop: 41965, Start Num: 64  
Candidate Starts for Seagreen\_64:  
(Start: 64 @41603 has 190 MA's), (98, 41903), (99, 41906), (106, 41948),

Gene: Shauna1\_63 Start: 42143, Stop: 42505, Start Num: 64  
Candidate Starts for Shauna1\_63:  
(Start: 64 @42143 has 190 MA's), (98, 42443), (99, 42446), (106, 42488),

Gene: ShiLan\_64 Start: 42432, Stop: 42788, Start Num: 64  
Candidate Starts for ShiLan\_64:  
(Start: 64 @42432 has 190 MA's), (82, 42591), (98, 42732), (99, 42735),

Gene: Shotgun\_53 Start: 35535, Stop: 35984, Start Num: 63  
Candidate Starts for Shotgun\_53:

(Start: 63 @35535 has 30 MA's), (86, 35694), (94, 35799), (95, 35805), (104, 35862), (110, 35979),

Gene: ShowerHandel\_68 Start: 42396, Stop: 42758, Start Num: 64

Candidate Starts for ShowerHandel\_68:

(Start: 64 @42396 has 190 MA's), (82, 42555), (84, 42570), (98, 42696), (106, 42741),

Gene: Shrubaron\_56 Start: 36743, Stop: 37192, Start Num: 63

Candidate Starts for Shrubaron\_56:

(Start: 63 @36743 has 30 MA's), (72, 36794), (86, 36902), (94, 37007), (95, 37013), (110, 37187),

Gene: SiSi\_63 Start: 41202, Stop: 41558, Start Num: 64

Candidate Starts for SiSi\_63:

(Start: 64 @41202 has 190 MA's), (98, 41502), (99, 41505),

Gene: SirFrank\_54 Start: 35866, Stop: 36318, Start Num: 61

Candidate Starts for SirFrank\_54:

(Start: 61 @35866 has 12 MA's), (75, 35944), (86, 36028), (87, 36064), (94, 36133), (108, 36238), (110, 36313),

Gene: Skugga\_53 Start: 35695, Stop: 36144, Start Num: 63

Candidate Starts for Skugga\_53:

(2, 35245), (3, 35257), (6, 35341), (7, 35344), (10, 35356), (22, 35443), (26, 35506), (32, 35563), (33, 35566), (51, 35656), (Start: 63 @35695 has 30 MA's), (72, 35746), (86, 35854), (94, 35959), (110, 36139),

Gene: Slim\_67 Start: 43053, Stop: 43415, Start Num: 64

Candidate Starts for Slim\_67:

(Start: 64 @43053 has 190 MA's), (98, 43353), (99, 43356), (106, 43398),

Gene: Smarties\_62 Start: 37502, Stop: 37951, Start Num: 63

Candidate Starts for Smarties\_62:

(51, 37460), (Start: 63 @37502 has 30 MA's), (72, 37553), (86, 37661), (94, 37766), (95, 37772), (110, 37946),

Gene: Soul22\_71 Start: 43477, Stop: 43839, Start Num: 64

Candidate Starts for Soul22\_71:

(Start: 64 @43477 has 190 MA's), (82, 43636), (98, 43777), (99, 43780), (106, 43822),

Gene: Spartacus\_67 Start: 42463, Stop: 42825, Start Num: 64

Candidate Starts for Spartacus\_67:

(Start: 64 @42463 has 190 MA's), (98, 42763), (99, 42766), (106, 42808),

Gene: Spikelee\_72 Start: 44062, Stop: 44424, Start Num: 64

Candidate Starts for Spikelee\_72:

(Start: 64 @44062 has 190 MA's), (98, 44362), (106, 44407),

Gene: Squint\_116 Start: 64970, Stop: 65290, Start Num: 67

Candidate Starts for Squint\_116:

(Start: 67 @64970 has 29 MA's), (74, 65039), (80, 65081), (91, 65198),

Gene: StAnnes\_63 Start: 42321, Stop: 42683, Start Num: 64

Candidate Starts for StAnnes\_63:

(Start: 64 @42321 has 190 MA's), (98, 42621), (99, 42624), (106, 42666),

Gene: Starcevich\_65 Start: 41944, Stop: 42300, Start Num: 64

Candidate Starts for Starcevich\_65:

(Start: 64 @41944 has 190 MA's), (98, 42244), (99, 42247),

Gene: Strokeseat\_61 Start: 39911, Stop: 40273, Start Num: 64

Candidate Starts for Strokeseat\_61:

(Start: 64 @39911 has 190 MA's), (98, 40211), (99, 40214), (106, 40256),

Gene: Sunny\_ Start: 37461, Stop: 37913, Start Num: 61

Candidate Starts for Sunny\_:

(Start: 61 @37461 has 12 MA's), (87, 37659), (91, 37701), (110, 37908),

Gene: SuperGrey\_69 Start: 44472, Stop: 44828, Start Num: 64

Candidate Starts for SuperGrey\_69:

(Start: 64 @44472 has 190 MA's), (82, 44631), (98, 44772), (99, 44775), (106, 44811),

Gene: Superphikiman\_115 Start: 64061, Stop: 64381, Start Num: 67

Candidate Starts for Superphikiman\_115:

(Start: 67 @64061 has 29 MA's), (74, 64130), (80, 64172), (91, 64289),

Gene: SwagPiggett\_70 Start: 44704, Stop: 45066, Start Num: 64

Candidate Starts for SwagPiggett\_70:

(35, 44587), (Start: 64 @44704 has 190 MA's), (82, 44863), (98, 45004), (106, 45049),

Gene: TChen\_67 Start: 44519, Stop: 44881, Start Num: 64

Candidate Starts for TChen\_67:

(Start: 64 @44519 has 190 MA's), (98, 44819), (99, 44822), (106, 44864),

Gene: Taj\_70 Start: 44021, Stop: 44383, Start Num: 64

Candidate Starts for Taj\_70:

(54, 44006), (Start: 64 @44021 has 190 MA's), (98, 44321), (99, 44324), (106, 44366),

Gene: TaylorSipht\_29 Start: 21289, Stop: 20720, Start Num: 62

Candidate Starts for TaylorSipht\_29:

(41, 21373), (Start: 62 @21289 has 23 MA's), (Start: 70 @21256 has 1 MA's), (78, 21184), (80, 21160), (84, 21115), (103, 20941),

Gene: Tchotchke\_64 Start: 41928, Stop: 42290, Start Num: 64

Candidate Starts for Tchotchke\_64:

(Start: 64 @41928 has 190 MA's), (82, 42087), (98, 42228), (99, 42231), (106, 42273),

Gene: Teamocil\_56 Start: 35776, Stop: 36225, Start Num: 63

Candidate Starts for Teamocil\_56:

(51, 35737), (Start: 63 @35776 has 30 MA's), (72, 35827), (86, 35935), (94, 36040), (95, 36046), (107, 36124),

Gene: ThetaBob\_73 Start: 44248, Stop: 44604, Start Num: 64

Candidate Starts for ThetaBob\_73:

(37, 44137), (Start: 64 @44248 has 190 MA's), (98, 44548), (99, 44551),

Gene: ThreeRngTarjay\_118 Start: 68893, Stop: 69225, Start Num: 67

Candidate Starts for ThreeRngTarjay\_118:

(Start: 67 @68893 has 29 MA's), (74, 68962), (91, 69121),

Gene: Toad24\_31 Start: 22325, Stop: 21831, Start Num: 62

Candidate Starts for Toad24\_31:

(41, 22412), (Start: 62 @22325 has 23 MA's), (80, 22196), (84, 22151), (86, 22145), (94, 22040), (96, 22031), (111, 21884),

Gene: Topiatin\_72 Start: 44952, Stop: 45314, Start Num: 64

Candidate Starts for Topiatin\_72:

(35, 44835), (Start: 64 @44952 has 190 MA's), (82, 45111), (98, 45252), (99, 45255), (106, 45297),

Gene: Totinger\_65 Start: 41519, Stop: 41875, Start Num: 64

Candidate Starts for Totinger\_65:

(Start: 64 @41519 has 190 MA's), (82, 41678), (98, 41819), (99, 41822), (106, 41858),

Gene: Tweety\_65 Start: 43115, Stop: 43471, Start Num: 64

Candidate Starts for Tweety\_65:

(Start: 64 @43115 has 190 MA's), (82, 43274), (84, 43289), (98, 43415), (99, 43418), (106, 43454),

Gene: Tyrumbra\_54 Start: 36909, Stop: 37358, Start Num: 63

Candidate Starts for Tyrumbra\_54:

(Start: 63 @36909 has 30 MA's), (72, 36960), (86, 37068), (94, 37173), (104, 37236), (110, 37353),

Gene: UncleRicky\_64 Start: 42054, Stop: 42416, Start Num: 64

Candidate Starts for UncleRicky\_64:

(Start: 64 @42054 has 190 MA's), (82, 42213), (98, 42354), (99, 42357), (106, 42399),

Gene: VRedHorse\_65 Start: 41397, Stop: 41759, Start Num: 64

Candidate Starts for VRedHorse\_65:

(Start: 64 @41397 has 190 MA's), (68, 41430), (82, 41556), (98, 41697), (99, 41700), (106, 41742),

Gene: Violac\_66 Start: 42928, Stop: 43290, Start Num: 64

Candidate Starts for Violac\_66:

(Start: 64 @42928 has 190 MA's), (82, 43087), (84, 43102), (98, 43228), (106, 43273),

Gene: Vivum\_66 Start: 42717, Stop: 43079, Start Num: 64

Candidate Starts for Vivum\_66:

(35, 42600), (Start: 64 @42717 has 190 MA's), (69, 42759), (82, 42876), (98, 43017), (99, 43020), (106, 43062),

Gene: Vulpecula\_29 Start: 21960, Stop: 21436, Start Num: 62

Candidate Starts for Vulpecula\_29:

(Start: 62 @21960 has 23 MA's), (Start: 70 @21927 has 1 MA's), (78, 21855), (80, 21831), (84, 21786), (96, 21666),

Gene: Wanda\_122 Start: 66271, Stop: 66600, Start Num: 67

Candidate Starts for Wanda\_122:

(Start: 67 @66271 has 29 MA's), (74, 66340), (76, 66358), (85, 66430), (86, 66433), (91, 66499), (102, 66583),

Gene: Wee\_70 Start: 44097, Stop: 44459, Start Num: 64

Candidate Starts for Wee\_70:

(54, 44082), (Start: 64 @44097 has 190 MA's), (98, 44397), (99, 44400), (106, 44442),

Gene: Westrich\_31 Start: 21873, Stop: 21508, Start Num: 80

Candidate Starts for Westrich\_31:

(31, 22128), (41, 22089), (Start: 62 @22002 has 23 MA's), (80, 21873), (84, 21828), (86, 21822), (94, 21717), (96, 21708), (111, 21561),

Gene: Whatsapiecost\_65 Start: 41324, Stop: 41686, Start Num: 64

Candidate Starts for Whatsapiecost\_65:

(Start: 64 @41324 has 190 MA's), (68, 41357), (98, 41624), (99, 41627), (106, 41669),

Gene: Whouxphf\_62 Start: 42311, Stop: 42673, Start Num: 64

Candidate Starts for Whouxphf\_62:

(Start: 64 @42311 has 190 MA's), (98, 42611), (106, 42656),

Gene: WileyE\_30 Start: 21353, Stop: 20883, Start Num: 62

Candidate Starts for WileyE\_30:

(31, 21479), (41, 21440), (Start: 62 @21353 has 23 MA's), (Start: 70 @21320 has 1 MA's), (78, 21248), (80, 21224), (94, 21068),

Gene: WillSterrel\_66 Start: 43580, Stop: 43942, Start Num: 64

Candidate Starts for WillSterrel\_66:

(Start: 64 @43580 has 190 MA's), (98, 43880), (99, 43883), (106, 43925),

Gene: XFactor\_63 Start: 40832, Stop: 41194, Start Num: 64

Candidate Starts for XFactor\_63:

(Start: 64 @40832 has 190 MA's), (98, 41132), (106, 41177),

Gene: Yeti\_54 Start: 35678, Stop: 36130, Start Num: 61

Candidate Starts for Yeti\_54:

(Start: 61 @35678 has 12 MA's), (72, 35732), (79, 35795), (86, 35840), (94, 35945), (95, 35951), (104, 36008), (110, 36125),

Gene: Yorick\_64 Start: 42551, Stop: 42913, Start Num: 64

Candidate Starts for Yorick\_64:

(Start: 64 @42551 has 190 MA's), (82, 42710), (98, 42851), (106, 42896),

Gene: Zapato\_53 Start: 35894, Stop: 36343, Start Num: 63

Candidate Starts for Zapato\_53:

(26, 35705), (33, 35765), (51, 35855), (Start: 63 @35894 has 30 MA's), (72, 35945), (86, 36053), (95, 36164), (104, 36221), (109, 36272),

Gene: Zapner\_79 Start: 44176, Stop: 44517, Start Num: 64

Candidate Starts for Zapner\_79:

(54, 44161), (Start: 64 @44176 has 190 MA's), (98, 44476), (99, 44479),

Gene: Zelink\_117 Start: 68840, Stop: 69172, Start Num: 67

Candidate Starts for Zelink\_117:

(Start: 67 @68840 has 29 MA's), (74, 68909), (91, 69068),

Gene: Zerg\_65 Start: 41676, Stop: 42038, Start Num: 64

Candidate Starts for Zerg\_65:

(Start: 64 @41676 has 190 MA's), (98, 41976), (106, 42021),

Gene: Zhuangyuan\_34 Start: 22580, Stop: 22224, Start Num: 65

Candidate Starts for Zhuangyuan\_34:

(31, 22724), (48, 22649), (Start: 65 @22580 has 3 MA's), (Start: 70 @22544 has 1 MA's), (80, 22448), (96, 22283), (102, 22235),

Gene: Zixiang\_27 Start: 21552, Stop: 21187, Start Num: 80

Candidate Starts for Zixiang\_27:

(41, 21768), (Start: 62 @21681 has 23 MA's), (80, 21552), (84, 21507), (86, 21501), (94, 21396), (96, 21387), (111, 21240),

Gene: Zizzle\_69 Start: 44029, Stop: 44391, Start Num: 64

Candidate Starts for Zizzle\_69:

(Start: 64 @44029 has 190 MA's), (82, 44188), (84, 44203), (98, 44329), (106, 44374),